KV-V16MF1/V16MN1
KV-V20MF1/V20MN1/V20MN11

RM-880

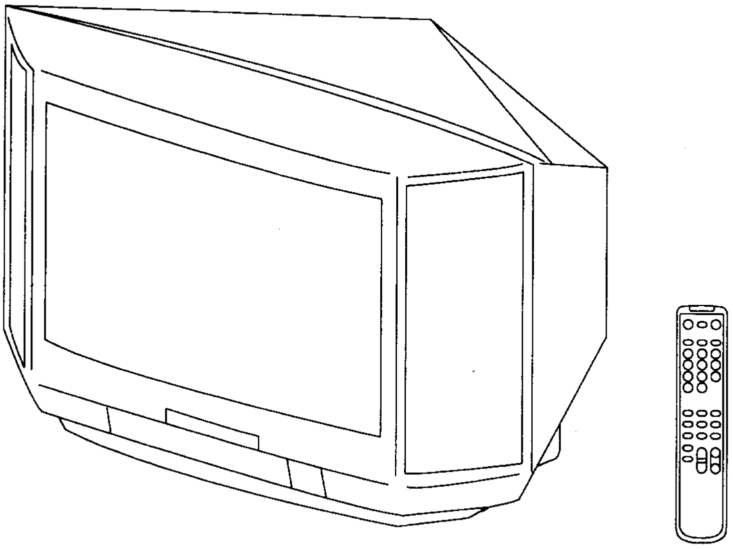
SERVICE MANUAL

ME Model

KV-V16MF1 Chassis No. SCC-H45G-A
KV-V20MF1 Chassis No. SCC-H45J-A
KV-V20MN11 Chassis No. SCC-H45D-A

Hongkong Model

KV-V16MN1 Chassis No. SCC-H72C-A
KV-V20MN1 Chassis No. SCC-H72D-A



BG-1S CHASSIS

MODEL OF THE SAME SERIES	
KV-V16MF1/V16MN1 KV-V20MF1/20MN1/V20MN1	

MICROFILM

TRINITRON® COLOR TV

SONY®

SPECIFICATIONS

	KV-V16MF1 KV-V16MN11	KV-V20MF1 KV-V20MN1 KV-V20MN11	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL60, SECAM, NTSC4.43, NTSC3.58		
Stereo system	NICAM Stereo B/G, I; A2 Stereo (German) B/G		KV-V16MN1/V20MN1/V20MN11
Channel converage **B/G**	VHF: E2 to E12/UHF: E21 to E69/CATV: S01 to S03, S1 to S41		
I	UHF: B21 to B68/CATV: S01 to S03, S1 to S41		
D/K	VHF: C1 to C12, R1 to R12/UHF: C13 to C57, R21 to R60/ CATV: S01 to S03, S1 to S41, Z1 to Z39		
M	VHF: A2 to A13/UHF: A14 to A79/ CATV: A-8 to A-2, A to W+4, W+6 to W+84		
Audio output (speaker)	3W×2		
Inputs	Antenna: 75 ohms		
	VIDEO IN jacks: phono jacks Video: 1 Vp-p, 75 ohms Audio: 500 mVrms, high impidance		
Outputs	Headphone jack: mini jack		
	MONITOR OUT jacks: phono jacks Video: 1 Vp-p, 75 ohms Audio: 500 mVrms		
Picture tube **Tube size (cm)**	16 in. 40	20 in. 50	Measured diagonally
Screen size (cm)	36	46	Measured diagonally
Dimensions (w/h/d, mm)	480 × 334 × 409	585 × 390 × 403	
Mass (kg)	12	18	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNIG!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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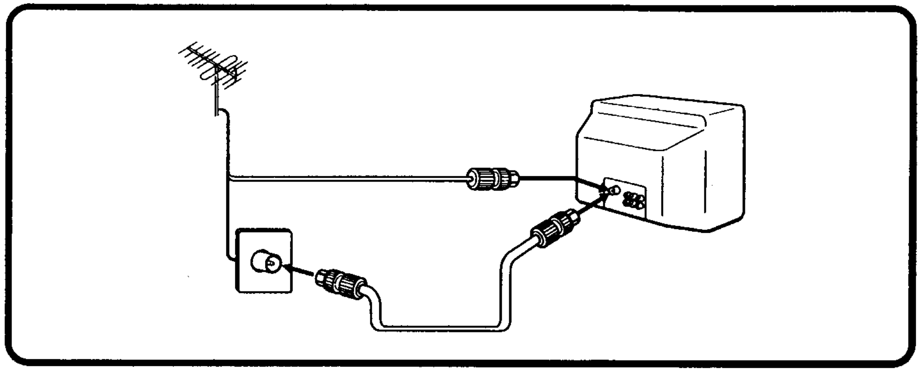
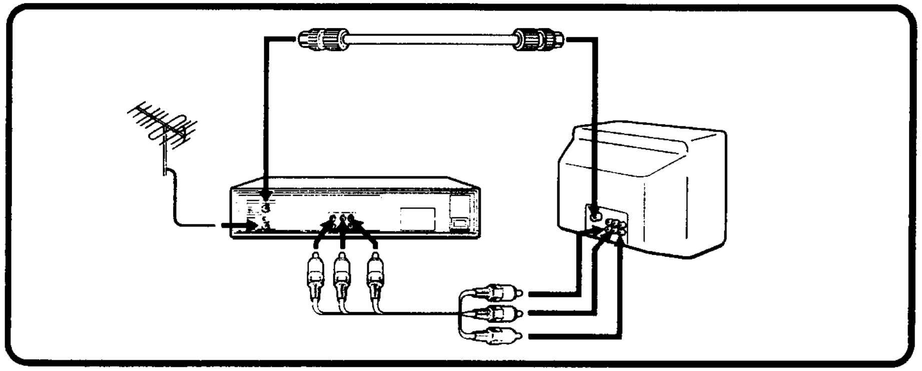
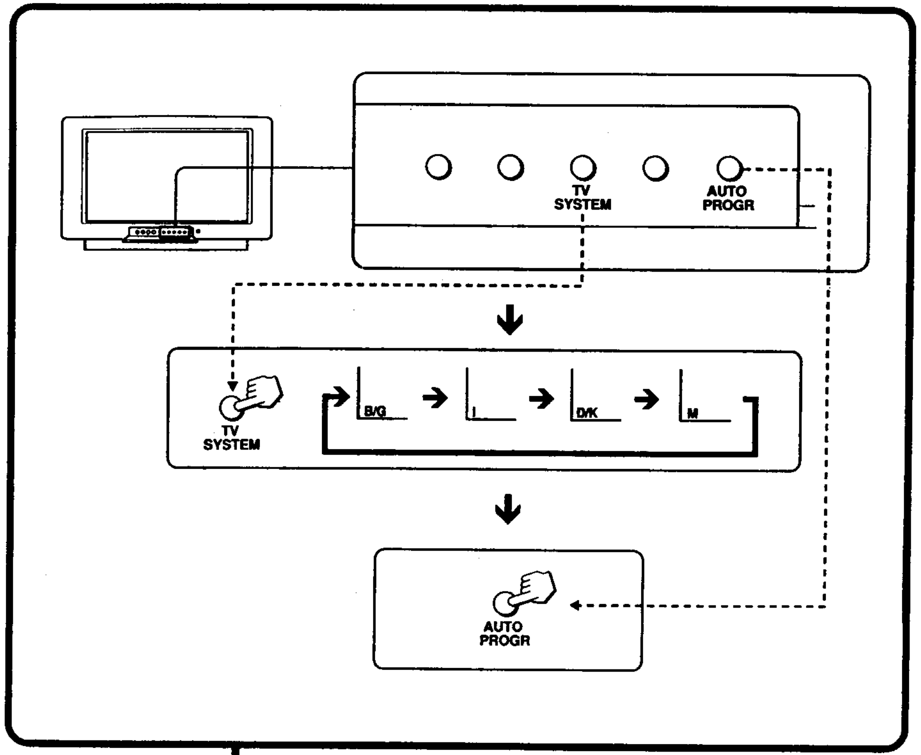
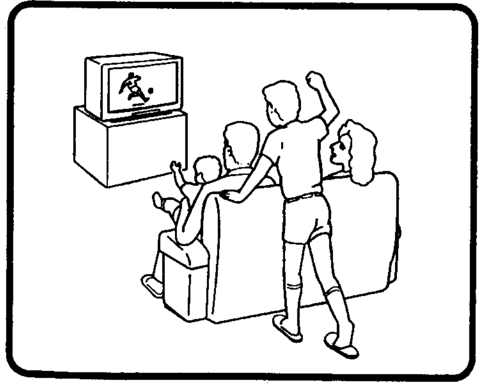
SECTION 1
GENERAL

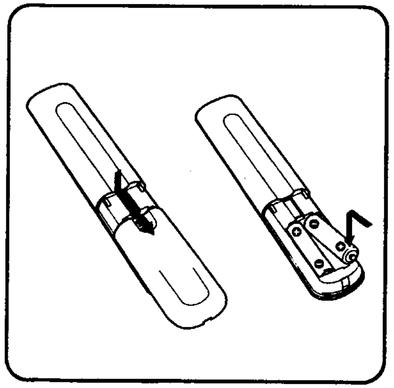
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.






TV SYSTEM
AUTO PROGR
TV SYSTEM
B/G
I
D/K
M
AUTO PROGR

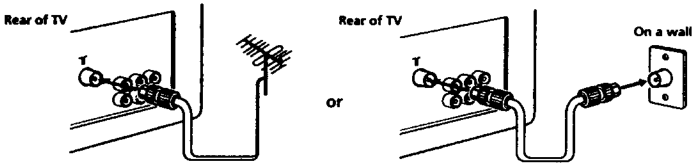




Connections

Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

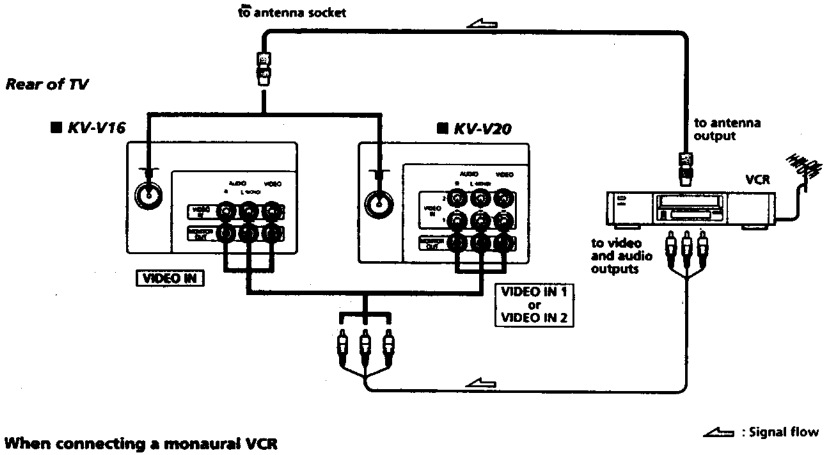
Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the T (antenna) socket at the rear of the TV.


Rear of TV
T
or
Rear of TV
T
On a wall

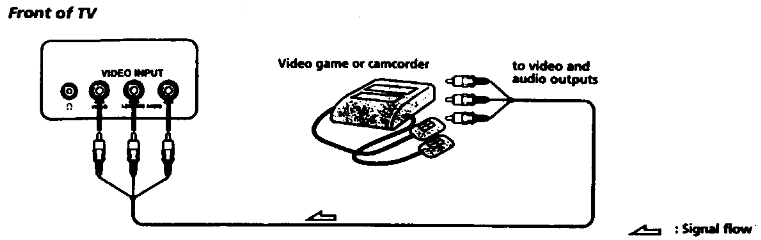
Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, video game or stereo system.

Connecting video equipment using video input jacks

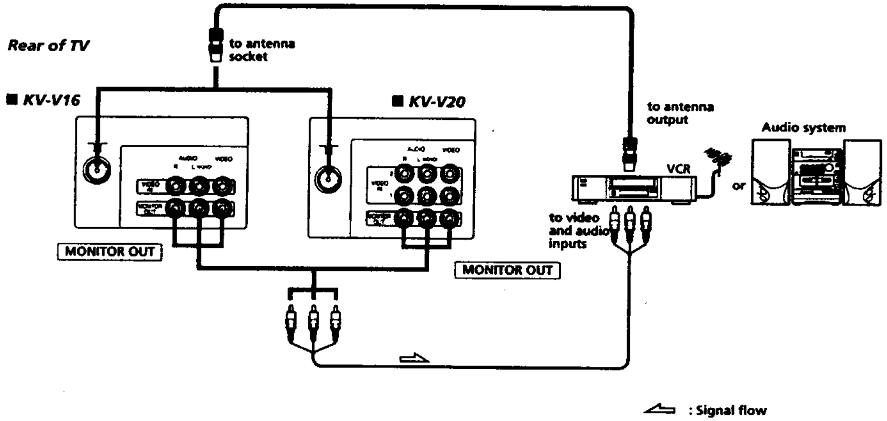

to antenna socket
Rear of TV
■ KV-V16
■ KV-V20
to antenna output
VCR
to video and audio outputs
VIDEO IN
VIDEO IN 1 or VIDEO IN 2
: Signal flow

When connecting a monaural VCR
Connect the yellow plug to VIDEO and the black plug to AUDIO-L (MONO).


Front of TV
VIDEO INPUT
Video game or camcorder
to video and audio outputs
: Signal flow

When using the video input jacks
Do not connect video equipment to the video input jacks at the front and the rear (VIDEO IN 1 for KV-V20) of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

Connecting audio/video equipment using MONITOR OUT jacks


Rear of TV
to antenna socket
■ KV-V16
■ KV-V20
to antenna output
Audio system
VCR
or
to video and audio inputs
MONITOR OUT
MONITOR OUT
: Signal flow

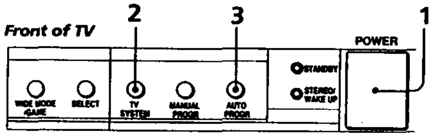
When recording through the MONITOR OUT jacks
If you change the channel or video input while recording with a VCR, the channel or video input you are recording also will be changed.

Presetting channels

Presetting channels automatically

You can preset up to 80 TV channels in numerical sequence from program position 1.

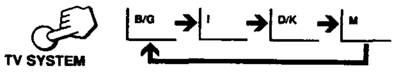
Front of TV



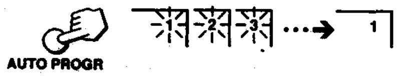
1 **Press POWER.**

When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

2 **Press TV SYSTEM until your local TV system appears.**



3 **Press AUTO PROGR.**



To start presetting channels automatically from the specified program position

1 Press MANUAL PROGR.
2 Press TV SYSTEM to select your local TV system.
3 Press PROGR +/– to select the program position.
4 Press AUTO PROGR.

Presetting channels manually

To change the channel for a particular program position or to receive a channel with a weak signal, preset the channel manually.

1 **Press MANUAL PROGR.**

2 **Press PROGR +/– until the required program position appears on the screen.**

3 **Press TV SYSTEM until your local TV system appears.**

4 **Press VOLUME +/– on the TV until the required channel picture appears on the screen.**

5 **Press MANUAL PROGR.**

If the TV system is not properly selected
The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

1 Press PROGR +/– to select the program position.
2 Press TV SYSTEM until the picture and sound become normal.

Notes
- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the TV SYSTEM is memorized for each program position.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR +/–.

1 **Press PROGR +/– until the unused or unwanted program position appears on the screen.**

2 **Press MANUAL PROGR.**

3 **Press PIC MODE on the remote commander.**

4 **Press MANUAL PROGR.**

To cancel the skip setting
Preset the channel manually or automatically again.

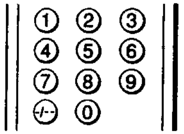
Watching the TV

1 **Press POWER to turn the TV on.**

When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

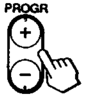
2 **Select the TV channel you want to watch.**

To select a channel directly
Press a number button.

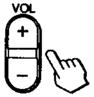


To select a two-digit channel, press "-/--" before the number buttons.
For example: to select channel 25, press "-/--," and then "2" and "5."

To scan through channels
Press PROGR +/– until the channel you want appears.

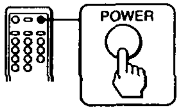


3 **Press VOL +/– to adjust the volume.**



Switching off the TV

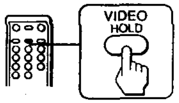
To switch off the TV temporarily, press POWER on the remote commander.



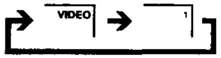
To switch off the TV completely, press POWER on the TV.
If the power on the TV is turned off in standby mode, the STANDBY indicator may remain alight for a while.

Watching the video input

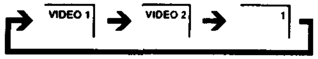
Press VIDEO/HOLD.



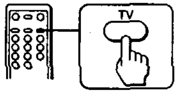
■ **KV-V16**



■ **KV-V20**

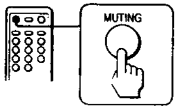


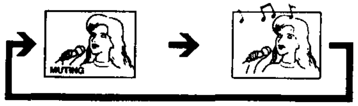
To watch TV, press TV.



Muting the sound

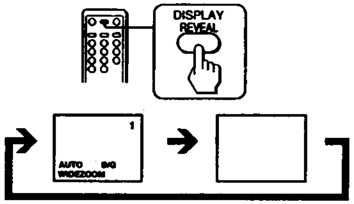
Press MUTING.





Displaying on-screen information

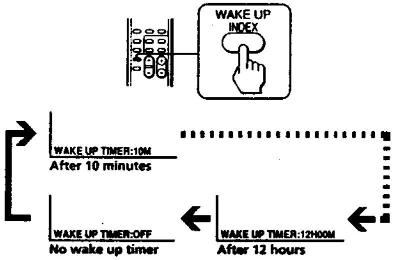
Press DISPLAY/REVEAL.
The program position, local system, and TV settings are displayed on the screen.


DISPLAY
REVEAL
1
AUTO B/G
WIDEZOOM

Setting the Wake Up Timer

You can set the TV to turn on automatically after the period of time you want.

1 Press WAKE UP/INDEX repeatedly to set the timer.
The on-screen display appears and the WAKE UP/STEREO indicator lights up.


WAKE UP
INDEX
WAKE UP TIMER:10M
After 10 minutes
WAKE UP TIMER:12H00M
After 12 hours
WAKE UP TIMER:OFF
No wake up timer

2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video mode.

3 Press POWER on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

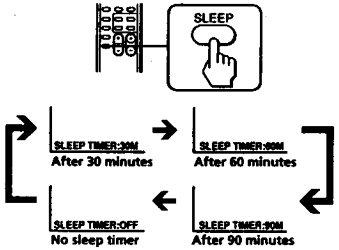
To cancel the Wake Up Timer, press WAKE UP/INDEX repeatedly until "WAKE UP TIMER: OFF" appears, or turn off the main power of the TV.

Notes
- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video mode just before the TV turns into standby mode will appear when the TV turns on using the Wake Up Timer.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. When you want to continue watching the TV, press any button or control on the TV or remote commander.

Setting the Sleep Timer

You can set the TV to turn off automatically after the period of time you want.

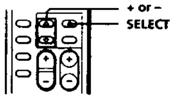
Press SLEEP.


SLEEP
SLEEP TIMER:30M
After 30 minutes
SLEEP TIMER:60M
After 60 minutes
SLEEP TIMER:90M
After 90 minutes
SLEEP TIMER:OFF
No sleep timer

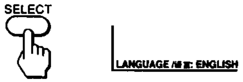
To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP TIMER: OFF" appears, or turn the TV off.

Changing the on-screen display language

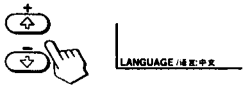
If you prefer Chinese to English, you can change the on-screen display language. You can use buttons on both the remote commander and the TV.



1 Press SELECT until the screen appears as follows:

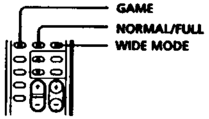

SELECT
LANGUAGE/语言: ENGLISH

2 Press + or – to select " 中文 ".


+
–
LANGUAGE/语言:中文

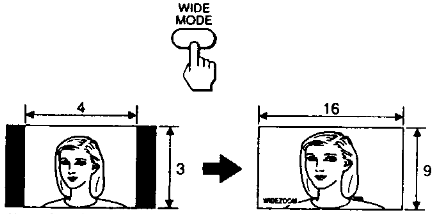
Note
- You can also use VOLUME +/– on the TV to select the on-screen display language.

Watching the picture in wide mode


GAME
NORMAL/FULL
WIDE MODE

Viewing a regular TV program

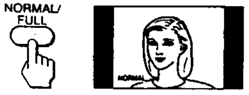
Press WIDE MODE repeatedly until "WIDEZOOM" appears.
The entire picture is enlarged to fully fit the screen.


WIDE MODE
4
3
16
9
WIDEZOOM

Normal mode picture

or

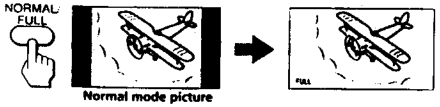
Press NORMAL/FULL repeatedly until "NORMAL" appears.


NORMAL/FULL
NORMAL

Normal mode picture

or

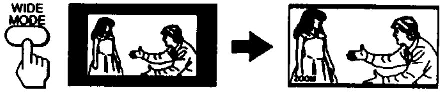
Press NORMAL/FULL repeatedly until "FULL" appears.
The width of the picture is increased.


NORMAL/FULL
FULL

Normal mode picture

Viewing a picture with black bands

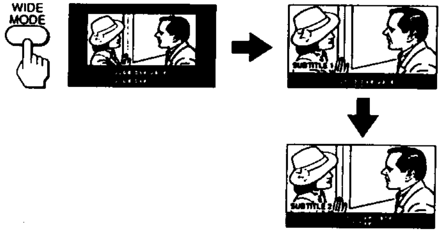
Press WIDE MODE repeatedly until "ZOOM" appears
The entire picture is enlarged and the edges are slightly cut off.


WIDE MODE
ZOOM

Viewing a picture with subtitles

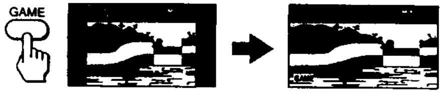
Press WIDE MODE repeatedly until "SUBTITLE 1" appears.
The entire picture is enlarged to fully fit the screen, and the height of the subtitle area is reduced.

If the subtitles are hidden at the bottom of the screen, press WIDE MODE again to view the picture with clearer subtitles in "SUBTITLE 2."


WIDE MODE
SUBTITLE 1
SUBTITLE 2

Viewing a video game screen

Press GAME.
The screen changes to the optimum mode for video games with soft picture and dynamic sound effect.

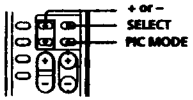


Normal mode picture

Note
- You can also press WIDE MODE/GAME on the TV repeatedly to view a picture in all wide modes and the normal mode.
  The screen changes as below:

→ WIDEZOOM → ZOOM → SUBTITLE 1 → SUBTITLE 2 ┐
└ GAME ← FULL ← NORMAL ← ┘

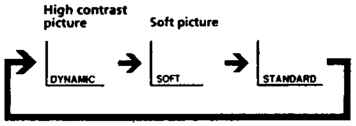
Adjusting the picture and sound


+ or –
SELECT
PIC MODE

Selecting the picture mode

Press PIC MODE until the mode you want appears.

Each time you press PIC MODE, the screen changes as follows:


High contrast picture
Soft picture
DYNAMIC
SOFT
STANDARD

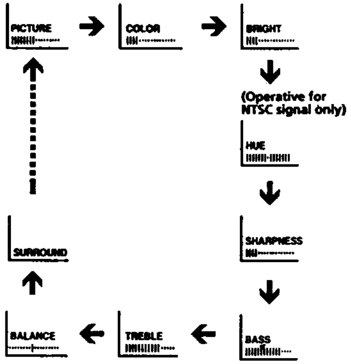
Note

- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

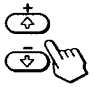
Adjusting the picture and sound settings

1 Press SELECT until the item you want to adjust appears.

Each time you press SELECT, the screen changes as follows:


PICTURE
COLOR
BRIGHT
(Operative for NTSC signal only)
HUE
SHARPNESS
BASS
TREBLE
BALANCE
SURROUND

2 Press + or - to adjust the item.



3 To adjust other items, repeat steps 1 and 2.

Note

- You can also use VOLUME +/– on the TV to adjust the picture and sound settings.

If the color of the picture is abnormal

When receiving programs through the ⏉ terminal: Press TV SYSTEM repeatedly or adjust the color setting until the color becomes normal. You can also change color system by selecting COL. SYS using the SELECT button on the TV.

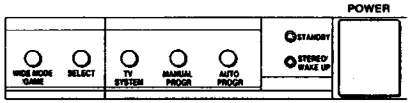
Note

- Normally set COLOR SYSTEM to AUTO.

If the sound is distorted or noisy

When receiving programs through the ⏉ terminal: Press TV SYSTEM until the sound becomes clear.

Front of TV

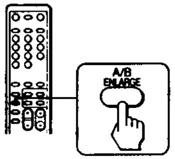

POWER
WIDE MODE /GAME
SELECT
TV SYSTEM
MANUAL PROGR
AUTO PROGR
STANDBY
STEREO/ WAKE UP

Selecting a stereo or bilingual program

■KV-V20MN11 only

Press A/B/ENLARGE repeatedly until you receive the sound you want.

The on-screen display changes corresponding to the selected sound and the WAKE UP/STEREO indicator also lights up.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → NICAM MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → NICAM MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → NICAM MONO (Regular sound)

When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	STEREO (Stereo sound)
A2 (German) bilingual	STEREO MAIN (Main sound) → STEREO SUB (Sub sound)

Receiving area for NICAM and A2 (German) programs

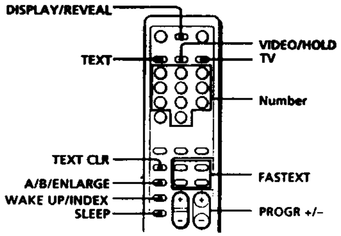
System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy, select "regular sound." The sound becomes monaural, however, the noise will be reduced.

Viewing Teletext

■ ***KV-V20MN11 only***



Displaying Teletext

1. Select a TV channel which carries the Teletext broadcast you want to watch.
2. Press TEXT to display the Teletext. A Teletext page is displayed (normally the index page). If there is no Teletext broadcast, 100 is displayed at the top left corner of the screen.

To cancel the Teletext display, press TV.

Superimposing a Teletext page on the TV picture

Press TEXT.
Each time you press TEXT, the screen changes as follows:

→ Teletext → Teletext and TV → TV ↵

Checking the contents of a Teletext service (INDEX)

Press WAKE UP/INDEX to display an overview of the Teletext contents and page numbers.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcasted, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the RED, GREEN, YELLOW, and CYAN buttons on the remote commander.

Press the color button which corresponds to the color-coded menu.
The page is displayed after a few seconds.

Selecting a Teletext page

To input the three-digit page number of the Teletext page, press the number buttons.
If you make a mistake, key in the correct page number again.

To access the next or previous page, press PROGR +/–.

Holding a Teletext page (subpage)

Press VIDEO/HOLD.
The HOLD symbol "⊕" is displayed at the top left corner of the screen.

To resume normal Teletext operation, press VIDEO/HOLD again or TEXT.

Revealing concealed information

Press DISPLAY/REVEAL.
To conceal the information, press DISPLAY/REVEAL again.

Enlarging the Teletext display

Press A/B/ENLARGE.
Each time you press A/B/ENLARGE, the Teletext display changes as follows:

→ Enlarge upper half → Enlarge lower half → Normal size ↵

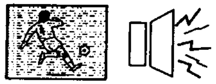
Waiting for a Teletext page while watching a TV program (TEXT CLEAR)

1. Key in the page number of the Teletext that you want to refer, then press TEXT CLR.
2. When the page number is displayed on the screen, press TEXT to switch the Teletext on.

Troubleshooting

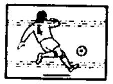
If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound



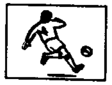
- → Check the antenna.
- → Check the antenna connection on the TV and on the wall.
- → Check the TV SYSTEM setting.

Dotted lines or stripes



- → This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

Double images or "ghosts"

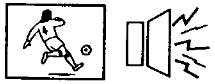


- → This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Note on the remote commander

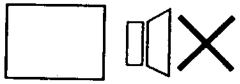
- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. TEXT.

Good picture
Noisy sound



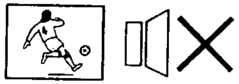
- → Check the TV SYSTEM setting.

No picture
No sound



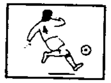
- → Press POWER.
- → Check the antenna connection.
- → Check the VCR connections.
- → Check the power cord connection.
- → Check the standby mode.

Good picture
No sound



- → Press VOLUME +
- → Press MUTING.
- → Press A/B/ENLARGE. (KV-V20MN11 only)

No color



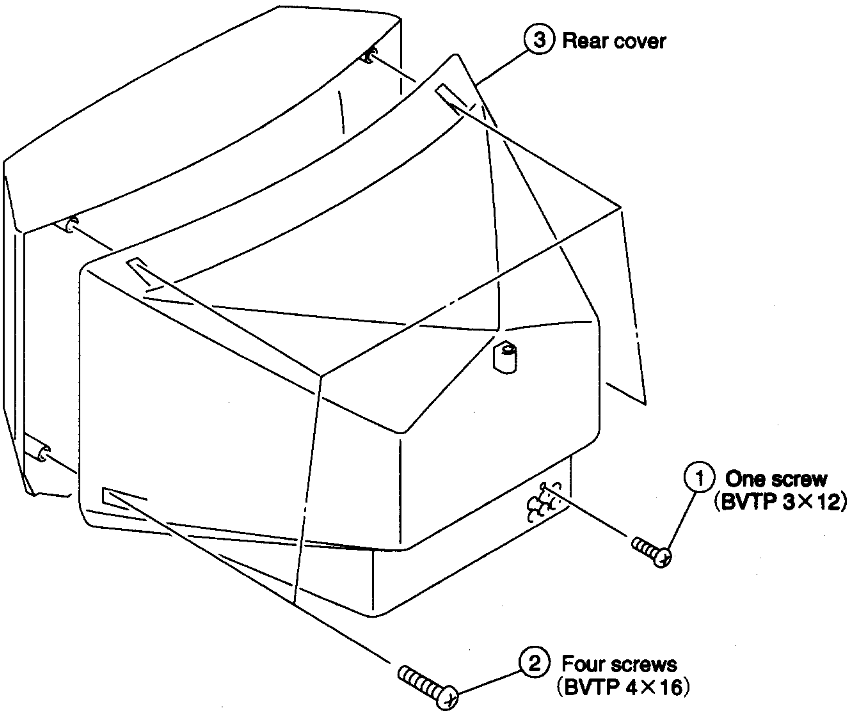
- → Adjust the COLOR level in the on-screen display.
- → Check the COL.SYS (COLOR SYSTEM) using the SELECT button on the TV.

TV cabinet creaks

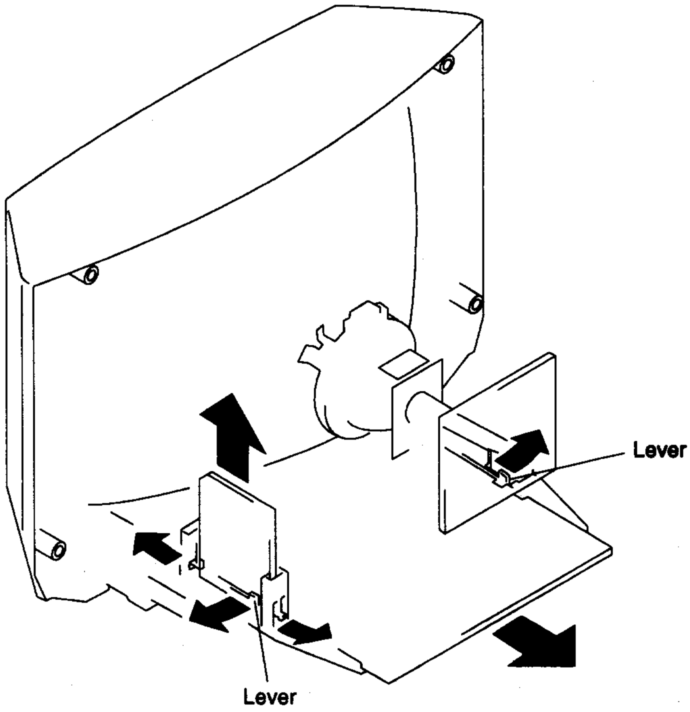
- → Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

SECTION 2
DISASSEMBLY

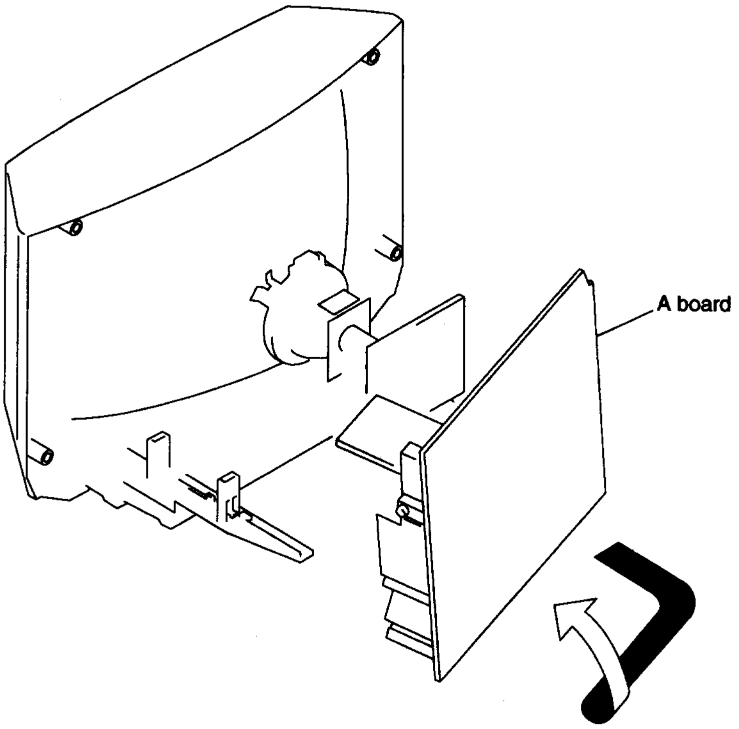
2-1. REAR COVER REMOVAL


③ Rear cover
① One screw
(BVTP 3×12)
② Four screws
(BVTP 4×16)

2-2. A/D1 BOARD REMOVAL


Lever
Lever

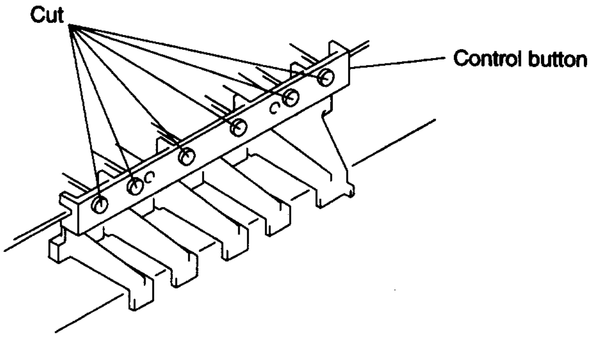
2-3. SERVICE POSITION

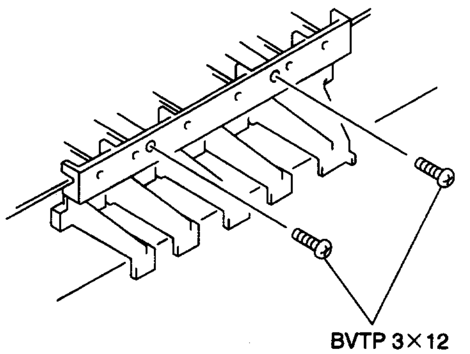


2-4. REPLACEMENT OF PARTS

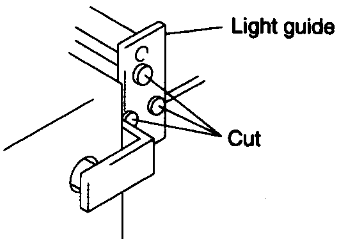
For replacement of the Control Button and Light Guide, cut the welded portions from then, exchange with the new parts, and fix them with screws (+BVTP) respectively.

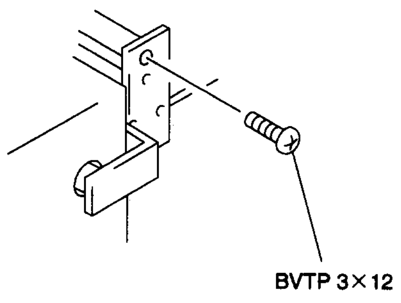
2-4-1. REPLACEMENT OF CONTROL BUTTON


Cut
Control button



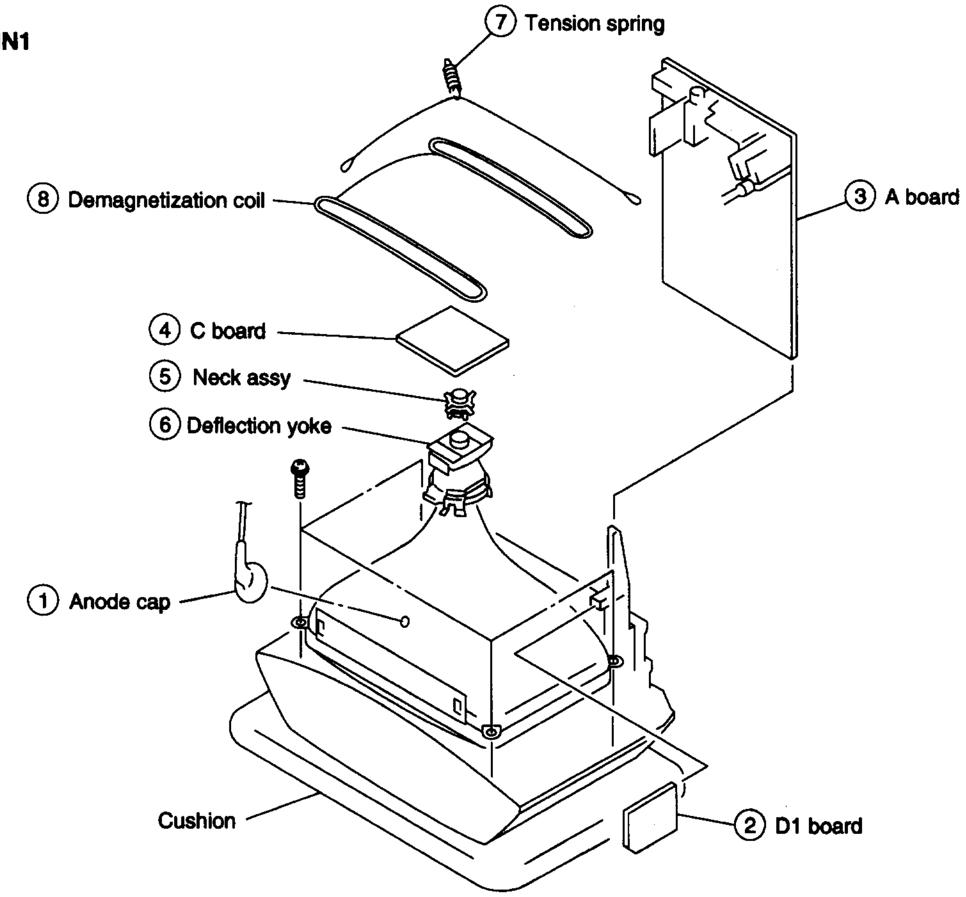
2-4-2. REPLACEMENT OF LIGHT GUIDE


Light guide
Cut

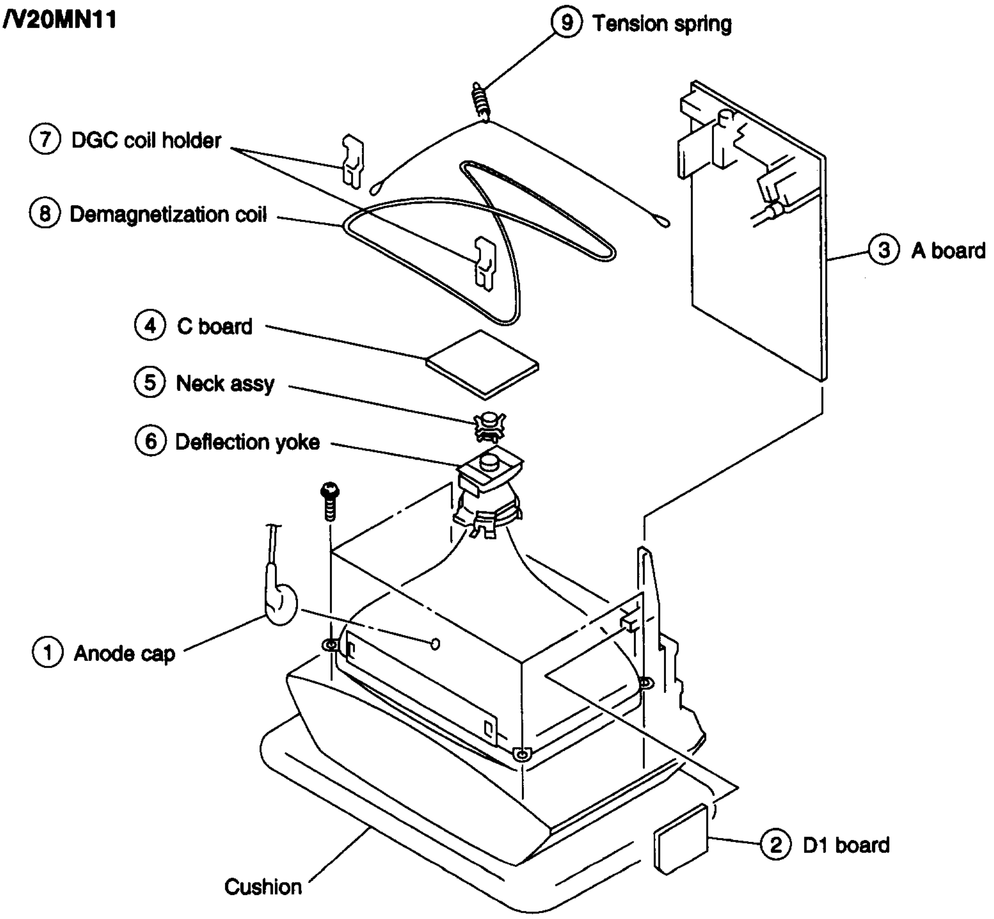


2-5. PICTURE TUBE REMOVAL

KV-V16MF1/V16MN1


⑦ Tension spring
③ A board
⑧ Demagnetization coil
④ C board
⑤ Neck assy
⑥ Deflection yoke
① Anode cap
Cushion
② D1 board

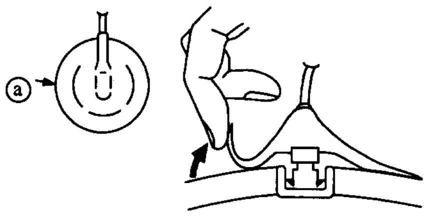
KV-V20MF1/V20MN1/V20MN11


⑨ Tension spring
⑦ DGC coil holder
⑧ Demagnetization coil
③ A board
④ C board
⑤ Neck assy
⑥ Deflection yoke
① Anode cap
② D1 board
Cushion

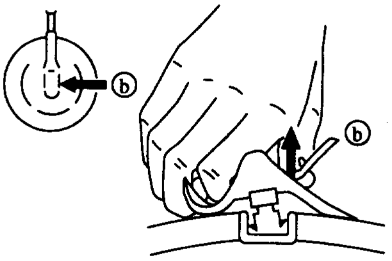
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

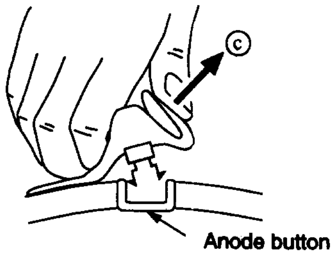
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



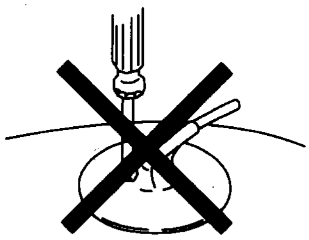
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

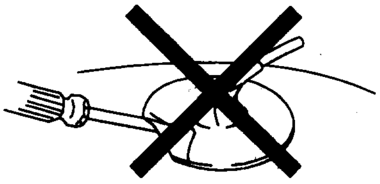
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted :

PICTURE control .... normal
BRIGHTNESS control .... normal

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast } normal
   Brightness }
2. Position neck ass'y as shown in Figure 3-1. .
3. Set the pattern generator raster signal to green.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-2. through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
6. Switch the raster signal to blue, then to red and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

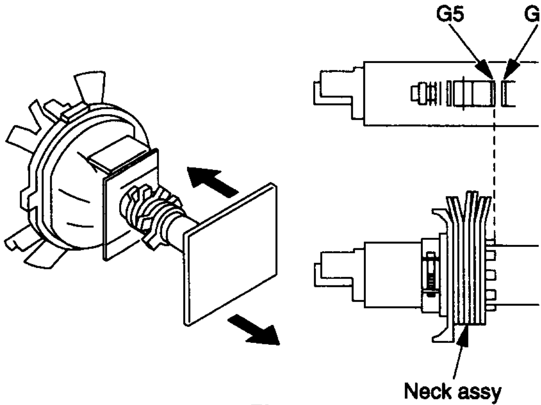

G5
G6
Neck assy

Fig. 3-1

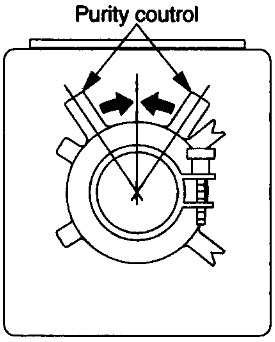

Purity coutrol

Fig. 3-2

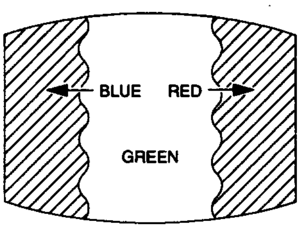

BLUE
RED
GREEN

Fig. 3-3

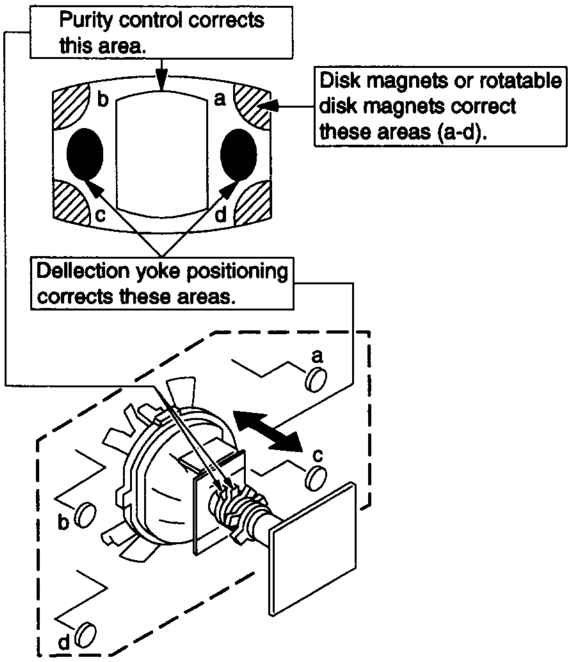
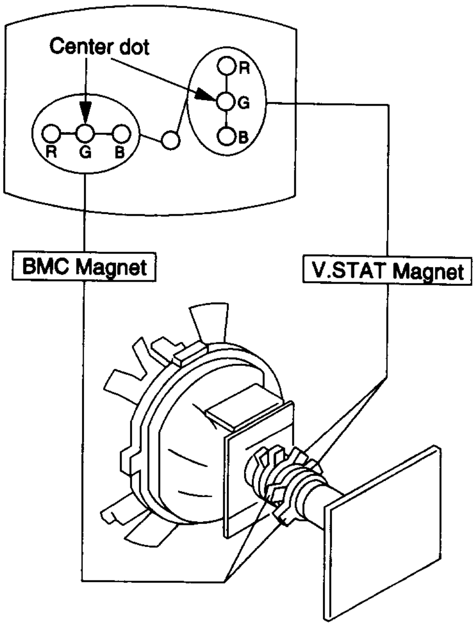

Purity control corrects this area.
Disk magnets or rotatable disk magnets correct these areas (a-d).
a
b
c
d
Dellection yoke positioning corrects these areas.

Fig. 3-4

3-2. CONVERGENCE

Preparations :

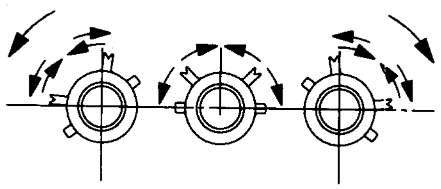
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.



(1) Horizontal and Vertical Static Convergence

1. (Moving horizontally), adjust the BMC Magnet so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the BMC Magnet cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal covergcnce with the BMC Magnet and the V. STAT magnet in the manner given below.
   (In this case, the BMC Magnet and the V. STAT magnet influence each other.)

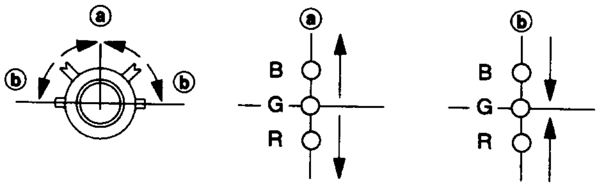
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



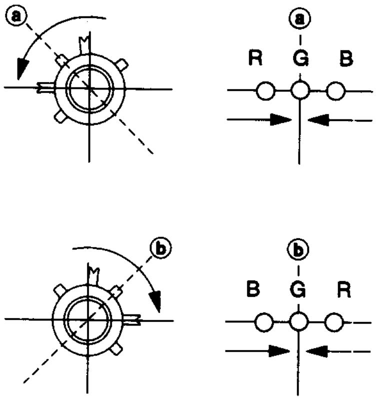
4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.

- Operation of BMC (Hexapole) Magnet.

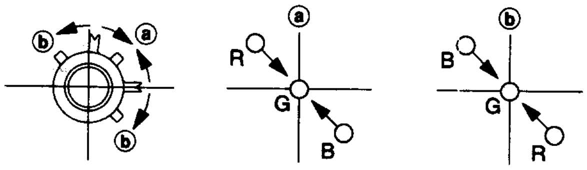
①



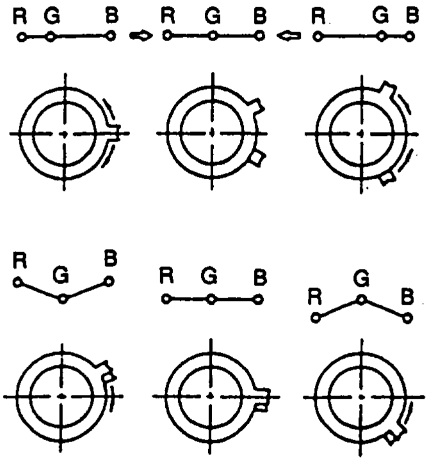
②

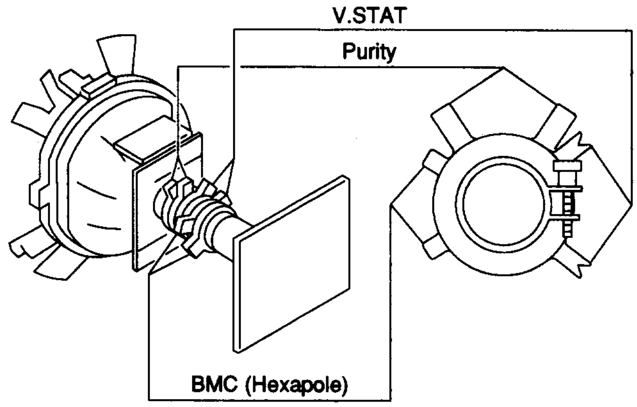


③



- Operation of BMC (Hexapole) Magnet.


R G B
R G B
R G B
R G B
R G B
R G B


V.STAT
Purity
BMC (Hexapole)

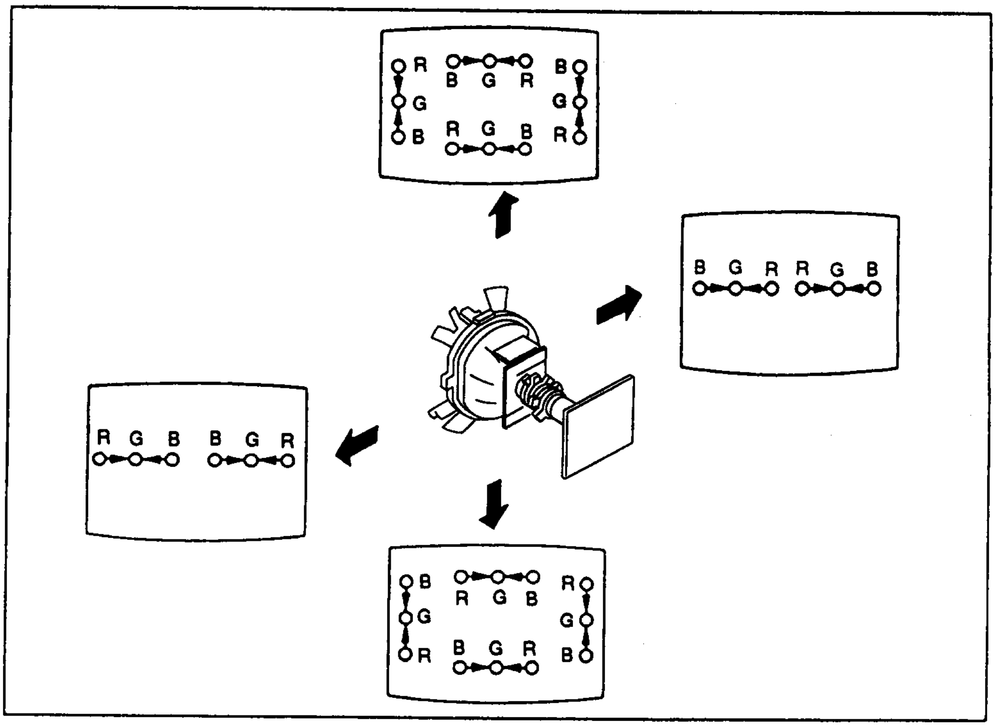
- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the V.STAT magnet to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

(2) Dynamic Convergence Adjustment

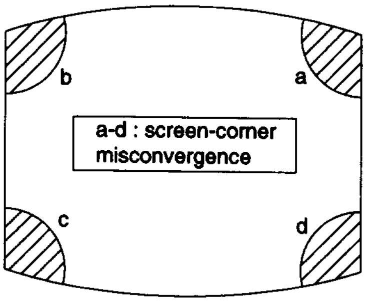
Preparations :

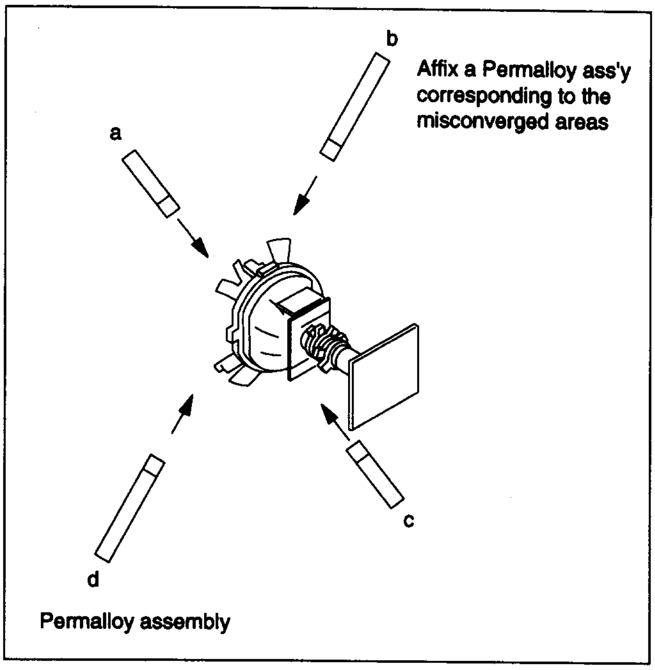
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the deflection yoke spacer.


R
B G R
B
G
G
B
R G B
R
B G R R G B
R G B B G R
B
R G B
R
G
G
R
B G R
B

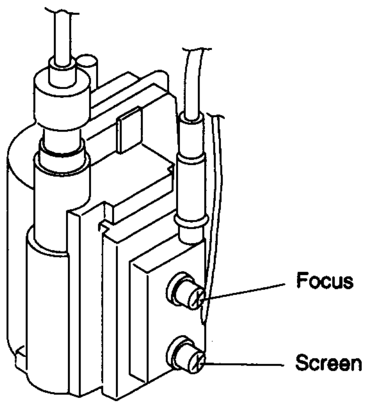
(3) Screen-corner Convergence


b
a
a-d : screen-corner misconvergence
c
d


b
Affix a Permalloy ass'y corresponding to the misconverged areas
a
c
d
Permalloy assembly

3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.


Focus
Screen

FLYBACK TRANSFORMER(T851)

a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Initial DATA	Note
09	RDR	25	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

b. METHOD OF CANCELLATION FROM SERVICE MODE

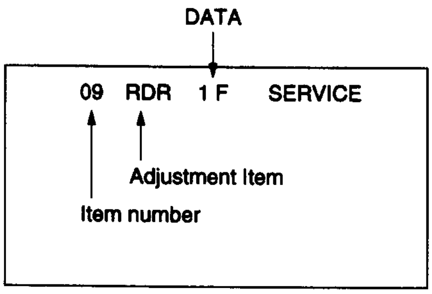
Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

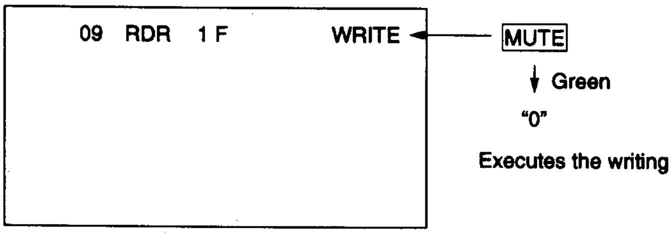
c. METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
3) Press MUTE button indicate WRITE (Green) on screen.
4) Press 0 button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.

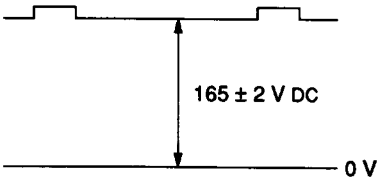

DATA
09 RDR 1 F SERVICE
Adjustment Item
Item number


09 RDR 1 F WRITE
MUTE
Green
"0"
Executes the writing

3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G, and B of the C board cathode to the oscilloscope.
4) Adjust G2 (T851) volume to the value below.



2. WHITE BALANCE ADJUSTMENTS

1) Set the Service Mode.
2) Input an entire white signal.
3) Set the PICTURE to maximum.
4) Select RDR(09) with $\boxed{1}$ and $\boxed{4}$, and then set the level to 25 with $\boxed{3}$ and $\boxed{6}$.
5) Select GDR(0A) and BDR(0B) with $\boxed{1}$ and $\boxed{4}$ and adjust the level with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
6) Write into the memory by pressing $\boxed{\text{MUTE}}$ → then $\boxed{0}$.

SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-870 that comes with this unit.

Entering service mode

With the unit on standby

↓

"DISPLAY"

↓

"5"

↓

"VOL (+)"

↓

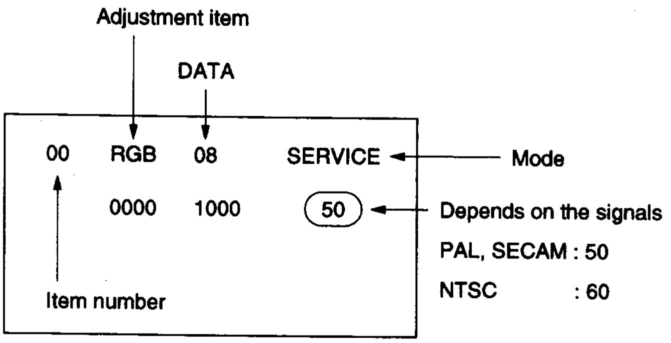
"POWER"

The operation sequence puts the unit into service mode.

"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTING"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"5", "0"	Service data initialization (Besure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :


Adjustment item
DATA
00
RGB
08
SERVICE
Mode
0000
1000
50
Depends on the signals
PAL, SECAM : 50
NTSC : 60
Item number

"1", "4" Select the adjustment item.

↓

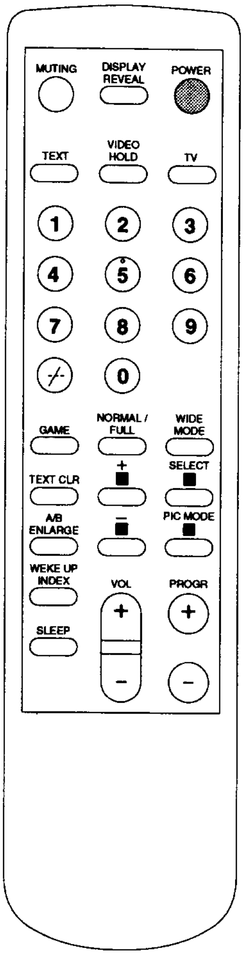
"3", "6" Raise/lower the data.

↓

"MUTING" Writes

↓

"0" Executes the writing.


MUTING
DISPLAY REVEAL
POWER
TEXT
VIDEO HOLD
TV
1
2
3
4
5
6
7
8
9
-/--
0
GAME
NORMAL / FULL
WIDE MODE
TEXT CLR
+
SELECT
A/B ENLARGE
–
PIC MODE
WEKE UP INDEX
VOL
PROGR
SLEEP
+
–

RM-880

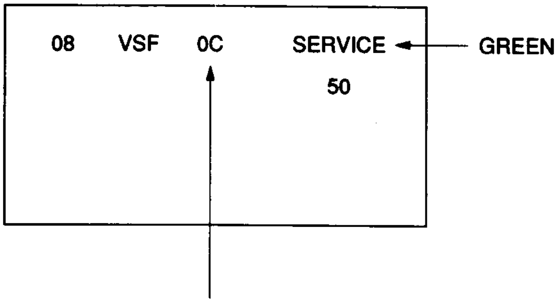
4-2. ADJUSTMENT METHOD

Item Number 08

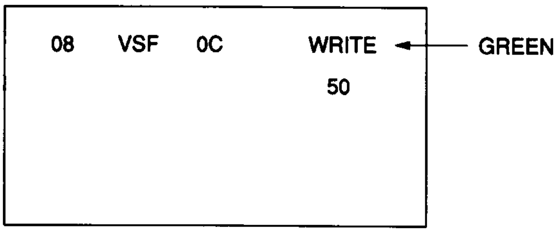
This explanation uses V-SHIFT as an example.

1. Select 08 V-SHIFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard is for 0F PAL reception.)
4. Write with the MUTE button.
5. Execute the writing with the "0" button. (The WRITE display.)

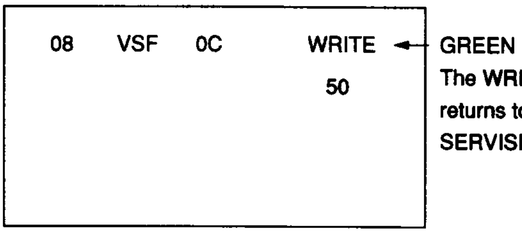
Use the same method for Items Number 00-41. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".


08
VSF
0C
SERVICE
50
GREEN

Adjusted with "3" and "6" buttons


08
VSF
0C
WRITE
50
GREEN

Written with "MUTE"


08
VSF
0C
WRITE
50
GREEN

The WRITE display returns to a green SERVISE.

Write executed with "0"

Adjustment Item Table (KV-V16MF1/V16MN1)

Item number	Adjustment Item	Data range	Initial data	Standard data	Note	Device
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
00	HSF	00~3F	24	2D 31 2D 31 2E 31 2C 31	H SHIFT	(TDA8366)
01	HSZ	00~3F	23	20 20 20 20 20 20 20 20	H SIZE	(TDA8366)
02	PAP	00~3F	21	20 20 20 20 0A 07 20 20	PIN AMPLITUDE	(TDA8366)
03	CNP	00~3F	29	20 20 20 20 1F 20 20 20	CORNER PIN	(TDA8366)
04	TLT	00~3F	20	20 20 20 20 26 29 20 20 20 20 20 20	TILT	(TDA8366)
05	VSL	00~3F	20	29 29 20 20 30 30 30 30 16 0E 18 0E	V SLOPE	(TDA8366)
06	VAP	00~3F	1D	39 37 26 22 24 2D 2C 27 25 25 21 21	V AMPLITUDE	(TDA8366)
07	SCR	00~3F	20	2C 28 20 20 16 15 15 15 20 20 20 20	S CORRECTION	(TDA8366)
08	VSF	00~3F	20	2C 2D 18 19 22 24 21 23 18 18 1A 1A	V SHIFT	(TDA8366)
09	RDR	00~3F	25	25	WHITE POINT R	(TDA8366)
0A	GDR	00~3F	20	20	WHITE POINT G	(TDA8366)
0B	BDR	00~3F	20	1E	WHITE POINT B	(TDA8366)
0C	YDL	00~0F	00	00	Y DELAY ADJUSTMENT	(TDA8366)
0D	FO	00~02	00	TV: 00 VIDEO: 00	PHI-1TIME CONSTANT	(TDA8366)
0E	AGC	00~3F	06	TV: 06 VIDEO: 02	AGC TAKE OVER	(TDA8366)
0F	VSW	00~01	01	TV: 00 VIDEO: 01	VIDEO MUTE	(TDA8366)
10	FOR	00~03	00	0	FORCED FIELD FREQ.	(TDA8366)
11	DL	00~01	00	0	INTERLACE	(TDA8366)
12	POC	00~01	00	0	SYNCHRONISATION	(TDA8366)
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
13	NCI	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	DIVIDER MODE	(TDA8366)
14	VID	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	VIDEO IDENT MODE	(TDA8366)
15	HCO	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	EHT TRACKING MODE	(TDA8366)
16	EVG	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	ENABLE V GUARD	(TDA8366)
17	SBL	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	SERVICE BLANKING	(TDA8366)
18	PRD	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	OVER-VOLTAGE INPUT	(TDA8366)
19	EXP	00~03	00	00	V DEFLECTION MODE	(TDA8366)
1A	SFM	00~01	01	00	H FREQ. DURING SWON	(TDA8366)
1B	PHL	00~01	00	00	COLOR X-TAL PLL	(TDA8366)
1C	COR	00~01	00	00	NOISE CORING PEAK	(TDA8366)
1D	PMX	00~3F	2d	NORMAL: 1E OTHERS: 23	PICTURE MAX DATA	(TDA8366)
1E	SBR	00~7F	4B	48	SUB-BRIGHTNESS	(TDA8366)
1F	SHU	00~0F	07	07	SUB-HUE	(TDA8366)
20	SSH	00~03	01	TV: 01 VIDEO: 03	SUB-SHARPNESS	(TDA8366)
21	SCL	00~3F	3F	3F	SUB-COLOR	(TDA8366)

①····· 50Hz Windezoom ②···· 60Hz Windezoom ③···· 50Hz Zoom ④···· 60Hz Zoom ⑤···· 50Hz Nomal
⑥····· 60Hz Nomal ⑦···· 50Hz Full ⑧···· 60Hz Full ⑨···· 50Hz Subtitle 1 ⑩···· 50Hz Subtitle 2
⑪····· 60Hz Subtitle 1 ⑫···· 60Hz Subtitle 2

※ 50 ··· 50Hz data 60 ··· 60Hz data

※ Standard data listed on the Adjustment Item Table are reference values, therefore differ per model.

For KV-V16MN1 only

Item number	Adjustment Item	Data range	Initial data	Standard data	Note	Device
22	FAW	00~FF	08	08	NICAM FAW Thresh	(MSP3410)
23	CTM	00~FF	08	08	NICAM Error Bit (MONO)	(MSP3410)
24	CTN	00~FF	50	50	NICAM Error Bit (NICAM)	(MSP3410)
25	WCD	00~FF	0A	0A	W. G. Change Data	(MSP3410)
26	WST	00~FF	15	15	W. G. Stereo Cut Point	(MSP3410)
27	WTM	00~FF	50	50	W. G. Timer Change	(MSP3410)
28	WBT	00~FF	EA	EA	W. G. BILINGUAL	(MSP3410)
29	ACG	00~01	01	01	AGC AUTO/CONST.	(MSP3410)
2A	CDB	00~7F	50	50	AGC GAIN CONST.	(MSP3410)
2B	FGP	00~7F	24	24	FM (BG, I, DK) Prescale	(MSP3410)
2C	FMP	00~7F	40	40	FM (M) Prescale	(MSP3410)
2D	WGP	00~7F	3C	3C	W. G. Prescale	(MSP3410)
2E	NIP	00~7F	7F	7F	NICAM Plescale	(MSP3410)
2F	CRM	00~01	00	00	Carrior Mute	(MSP3410)
30	ACO	00~01	01	01	Audio Clock Out	(MSP3410)
31	WAC	00~0F	01	01	W. G. Agreement count	(MSP3410)
32	TXP	00~0F	0A	06	Text Picture cont.	(SAA5281)
33	MXP	00~0F	0B	0D	Text Mix mode Pic.	(SAA5281)
34	BKP	00~3F	00	00		
35	HBL	00~3F	25	50 : 26 60 : 28	H Blk Left Width	(CXP85200)
36	HBR	00~3F	20	50 : 1E 60 : 1F	H Blk Right Width	(CXP85200)
37	VBH	00~FF	00	50 : 2B 60 : 1E	V Blk High Width	(CXP85200)
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
38	VBL	00~FF	FF	8C 142 148 14B 153 15E	V Blk Low Width	(CXP85200)
39	ODL	00~FF	10	10	Power ON Delay	(CXP85200)
3A	OFR	00~0F	00	03	Remo. con. RGB OUT	(CXP85200)
3B	OFM	00~0F	00	03	Main power RGB OUT	(CXP85200)
3C	OSH	00~3F	0A	0A	OSD Position H	(CXP85200)
3D	DKS	00~01	00	00	DK NICAM ON/OFF	(CXP85200)
3E	MUT	00~01	01	01	No Sync. Mute	(CXP85200)
3F	DWZ	00~01	00	00	Disable Widezoom	(CXP85200)
40	ABL	00~01	01	01	Bright ABL	(CXP85200)
41	OP0	00~FF	40	40	Option 0	(CXP85200)
42	OP1	00~FF	07	87	Option 1	(CXP85200)

No 41 OP0 * Input data are different according to models.

Item	–	AV Input		–	–	–	–	Saudi
KV-V16MF1	0	1	0	0	0	0	0	0
KV-V16MN1	0	1	0	0	0	0	0	0

No 42 OP1

Item	WIDE	–	–	TV System		NTSC	SECAM	Chin
KV-V16MF1	1	0	0	0	0	1	1	1
KV-V16MN1	1	0	0	0	0	1	1	1

Adjustment Item Table (KV-V20MF1/V20MN1/V20MN11)

Item number	Adjustment Item	Data range	Initial data	Standard data	Note	Device
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
00	HSF	00~3F	24	23 23 25 23 28 28 2A 28	H SHIFT	(TDA8366)
01	HSZ	00~3F	23	28 28 2D 28 27 27 2B 27	H SIZE	(TDA8366)
02	PAP	00~3F	21	23 2F 24 1F 23 2D 23 1E	PIN AMPLITUDE	(TDA8366)
03	CNP	00~3F	29	24 24 1D 1E 20 20 22 1D	CORNER PIN	(TDA8366)
04	TLT	00~3F	20	1E 1B 1A 1F 1C 18 19 1B 16 1E 1A 19	TILT	(TDA8366)
05	VSL	00~3F	20	20 20 20 20 20 20 20 20 16 0E 17 0E	V SLOPE	(TDA8366)
06	VAP	00~3F	1D	2A 26 20 26 28 1F 1C 21 26 26 20 20	V AMPLITUDE	(TDA8366)
07	SCR	00~3F	20	2C 20 15 15 2C 27 15 15 20 20 27 27	S CORRECTION	(TDA8366)
08	VSF	00~3F	20	2C 2D 2E 2E 2E 2E 2F 2F 2D 2D 2D 2F	V SHIFT	(TDA8366)
09	RDR	00~3F	25	25	WHITE POINT R	(TDA8366)
0A	GDR	00~3F	20	24	WHITE POINT G	(TDA8366)
0B	BDR	00~3F	20	23	WHITE POINT B	(TDA8366)
0C	YDL	00~0F	00	00	Y DELAY ADJUSTMENT	(TDA8366)
0D	FO	00~02	00	TV: 00 VIDEO: 00	PHI-1TIME CONSTANT	(TDA8366)
0E	AGC	00~3F	06	TV: 06 VIDEO: 02	AGC TAKE OVER	(TDA8366)
0F	VSW	00~01	01	TV: 00 VIDEO: 01	VIDEO MUTE	(TDA8366)
10	FOR	00~03	00	0	FORCED FIELD FREQ.	(TDA8366)
11	DL	00~01	00	0	INTERLACE	(TDA8366)
12	POC	00~01	00	0	SYNCHRONISATION	(TDA8366)
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
13	NCI	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	DIVIDER MODE	(TDA8366)
14	VID	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	VIDEO IDENT MODE	(TDA8366)
15	HCO	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	EHT TRACKING MODE	(TDA8366)
16	EVG	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	ENABLE V GUARD	(TDA8366)
17	SBL	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	SERVICE BLANKING	(TDA8366)
18	PRD	00~01	00	00 00 00 00 00 00 00 00 00 00 00 00	OVER-VOLTAGE INPUT	(TDA8366)
19	EXP	00~03	00	00	V DEFLECTION MODE	(TDA8366)
1A	SFM	00~01	01	00	H FREQ. DURING SWON	(TDA8366)
1B	PHL	00~01	00	00	COLOR X-TAL PLL	(TDA8366)
1C	COR	00~01	00	00	NOISE CORING PEAK	(TDA8366)
1D	PMX	00~3F	2d	NORMAL: 21 OTHERS: 29	PICTURE MAX DATA	(TDA8366)
1E	SBR	00~7F	4B	48	SUB-BRIGHTNESS	(TDA8366)
1F	SHU	00~0F	07	07	SUB-HUE	(TDA8366)
20	SSH	00~03	01	TV: 01 VIDEO: 03	SUB-SHARPNESS	(TDA8366)
21	SCL	00~3F	3F	3F	SUB-COLOR	(TDA8366)

①····· 50Hz Windezoom ②···· 60Hz Windezoom ③···· 50Hz Zoom ④···· 60Hz Zoom ⑤···· 50Hz Nomal
⑥····· 60Hz Nomal ⑦···· 50Hz Full ⑧···· 60Hz Full ⑨···· 50Hz Subtitle 1 ⑩···· 50Hz Subtitle 2
⑪····· 60Hz Subtitle 1 ⑫···· 60Hz Subtitle 2

※ 50 ··· 50Hz data 60 ··· 60Hz data

※ Standard data listed on the Adjustment Item Table are reference values, therefore differ per model.

For KV-V20MN1/V20MN11 only

Item number	Adjustment Item	Data range	Initial data	Standard data	Note	Device
22	FAW	00~FF	08	08	NICAM FAW Thresh	(MSP3410)
23	CTM	00~FF	08	08	NICAM Error Bit (MONO)	(MSP3410)
24	CTN	00~FF	50	50	NICAM Error Bit (NICAM)	(MSP3410)
25	WCD	00~FF	0A	0A	W. G. Change Data	(MSP3410)
26	WST	00~FF	15	15	W. G. Stereo Cut Point	(MSP3410)
27	WTM	00~FF	50	50	W. G. Timer Change	(MSP3410)
28	WBT	00~FF	EA	14A	W. G. BILINGUAL	(MSP3410)
29	ACG	00~01	01	01	AGC AUTO/CONST.	(MSP3410)
2A	CDB	00~7F	50	50	AGC GAIN CONST.	(MSP3410)
2B	FGP	00~7F	24	24	FM (BG, I, DK) Prescale	(MSP3410)
2C	FMP	00~7F	40	40	FM (M) Prescale	(MSP3410)
2D	WGP	00~7F	3C	3C	W. G. Prescale	(MSP3410)
2E	NIP	00~7F	7F	7F	NICAM Plescale	(MSP3410)
2F	CRM	00~01	00	00	Carrior Mute	(MSP3410)
30	ACO	00~01	01	01	Audio Clock Out	(MSP3410)
31	WAC	00~0F	01	01	W. G. Agreement count	(MSP3410)
32	TXP	00~0F	0A	06	Text Picture cont.	(SAA5281)
33	MXP	00~0F	0B	0D	Text Mix mode Pic.	(SAA5281)
34	BKP	00~3F	00	20		
35	HBL	00~3F	25	50 : 26 60 : 28	H Blk Left Width	(CXP85200)
36	HBR	00~3F	20	50 : 1E 60 : 1F	H Blk Right Width	(CXP85200)
37	VBH	00~FF	00	50 : 2B 60 : 1E	V Blk High Width	(CXP85200)
				① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫		
38	VBL	00~FF	FF	8B 141 148 152 14C 156	V Blk Low Width	(CXP85200)
39	ODL	00~FF	10	10	Power ON Delay	(CXP85200)
3A	OFR	00~0F	00	03	Remo. con. RGB OUT	(CXP85200)
3B	OFM	00~0F	00	03	Main power RGB OUT	(CXP85200)
3C	OSH	00~3F	0A	0A	OSD Position H	(CXP85200)
3D	DKS	00~01	00	00	DK NICAM ON/OFF	(CXP85200)
3E	MUT	00~01	01	01	No Sync. Mute	(CXP85200)
3F	DWZ	00~01	00	00	Disable Widezoom	(CXP85200)
40	ABL	00~01	01	01	Bright ABL	(CXP85200)
41	OP0	00~FF	40	60	Option 0	(CXP85200)
42	OP1	00~FF	07	87	Option 1	(CXP85200)

No 41 OP0 * Input data are different according to models.

Item	–	AV Input		–	–	–	–	Saudi
KV-V20MF1	0	1	1	0	0	0	0	0
KV-V20MN1	0	1	1	0	0	0	0	0
KV-V20MN11	0	1	1	0	0	0	0	0

No 42 OP1

Item	WIDE	–	–	TV System		NTSC	SECAM	Chin
KV-V20MF1	1	0	0	0	0	1	1	1
KV-V20MN1	1	0	0	0	0	1	1	1
KV-V20MN11	1	0	0	0	0	1	1	1

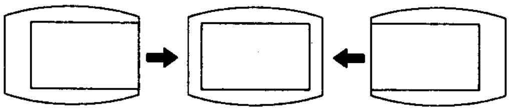
4-3. A BOARD, ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons "5" and "0" (Data Initialize), and "2" and "0" (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.
   In case some items are not well-adjusted, give them fine adjustment.
   Write the data per each item number (MUTE + 0).
4. Select item numbers "41" (OP0) and "42" (OP1) and respectively set the bit per model with command buttons "3" and "6".
5. Press commander buttons "8" and "0" (Test Normal) to return to the data that was set on the shipment from the factory.
   (= Cancel Service Mode.)

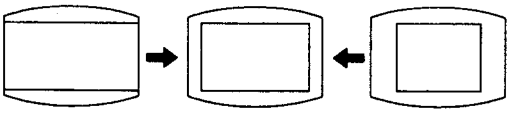
4-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

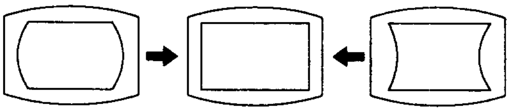
00 HSF (H.SHIFT)



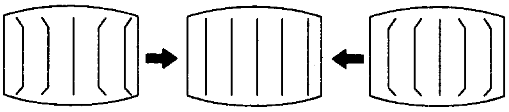
01 HSZ (H SIZE)



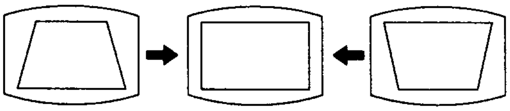
02 PAP (PIN AMP)



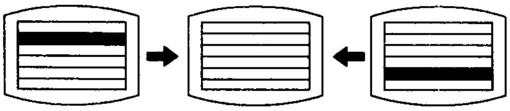
03 CNP (CORNER PIN)



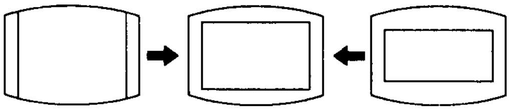
04 TLT (TILT)



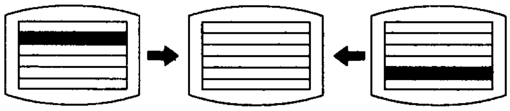
05 VSL (V SLOP)



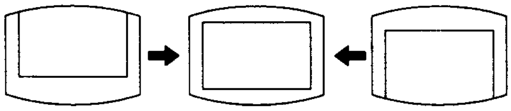
06 VAP (V AMP)



07 SCR (S CORRECTION)

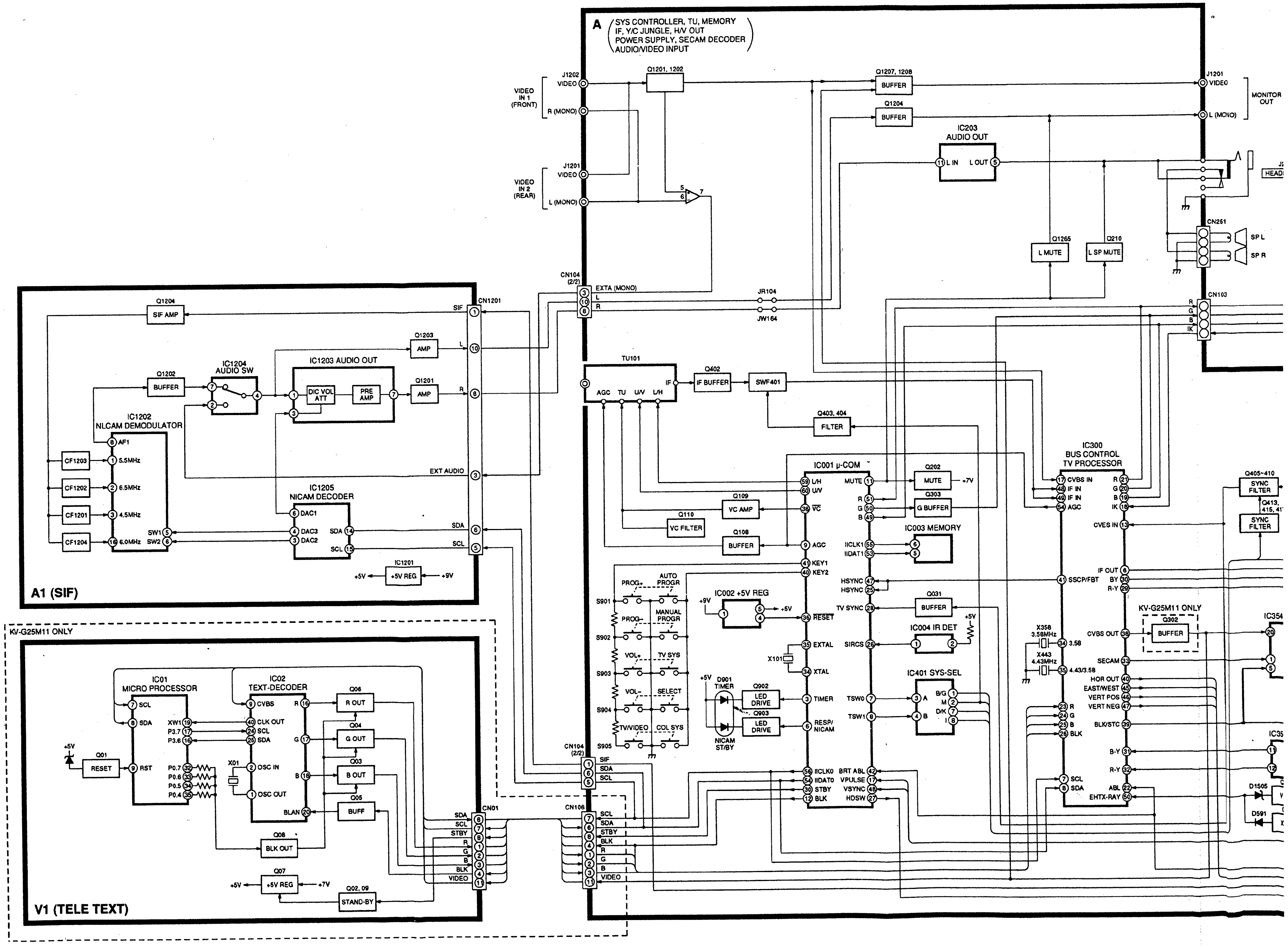


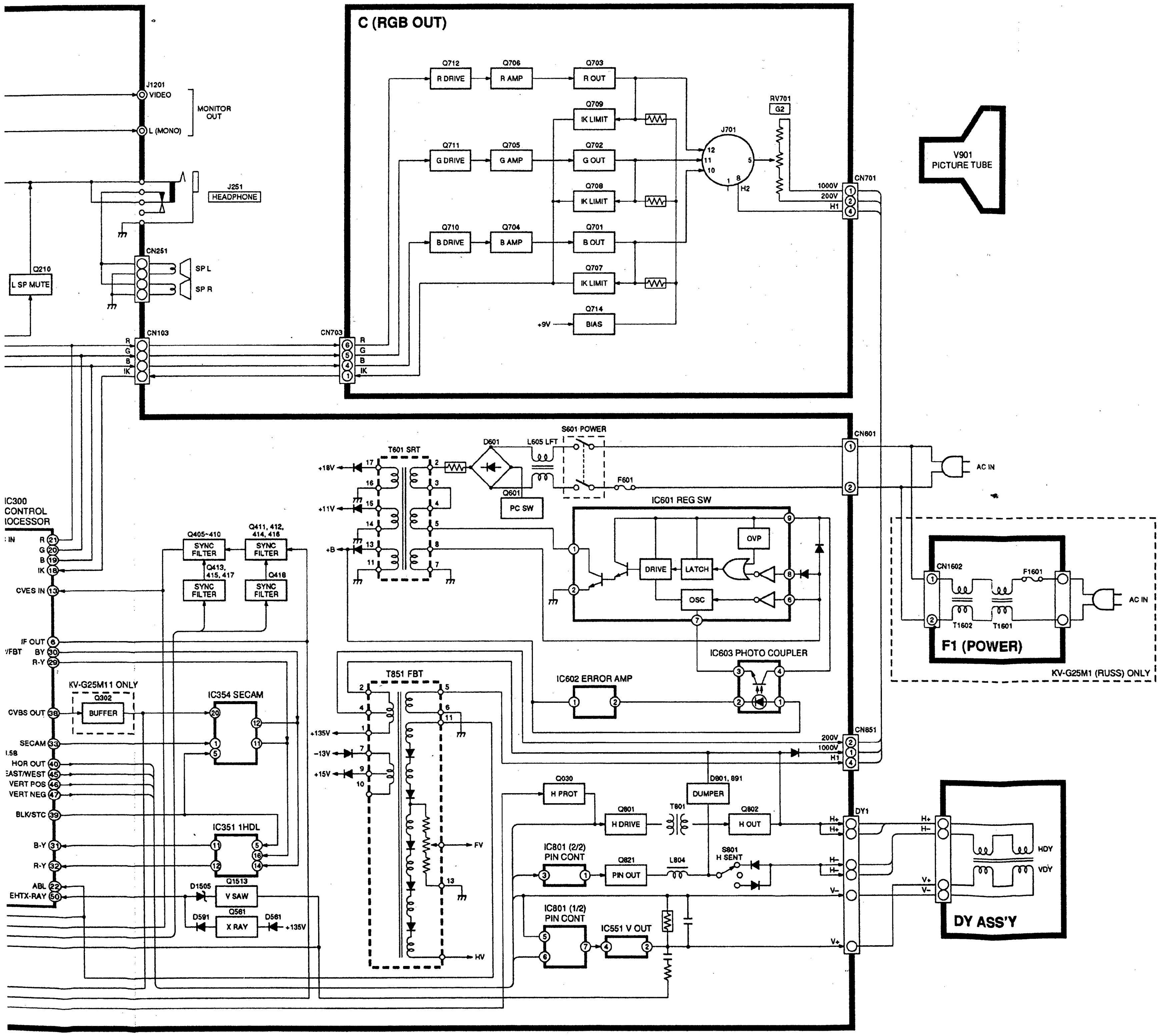
08 VSF (V SHIFT)



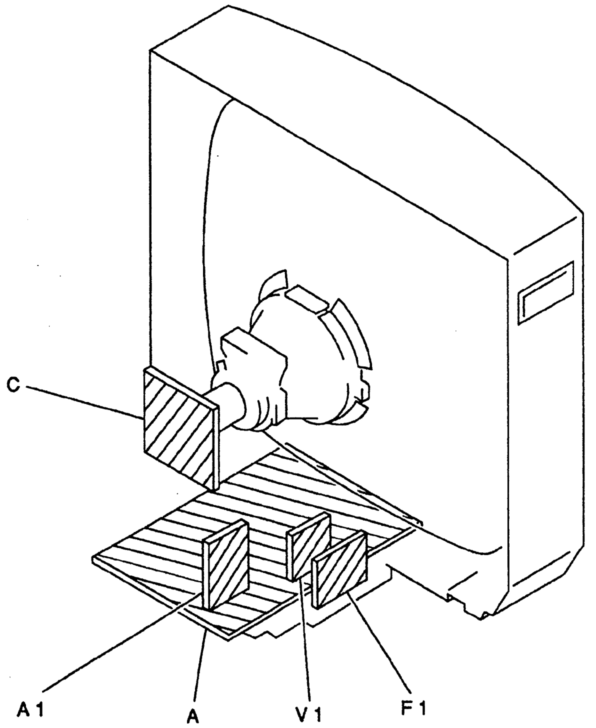
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS


A
SYS CONTROLLER, TU, MEMORY
IF, Y/C JUNGLE, H/V OUT
POWER SUPPLY, SECAM DECODER
AUDIO/VIDEO INPUT
J1202 VIDEO
VIDEO IN 1 (FRONT)
R (MONO)
J1201 VIDEO
VIDEO IN 2 (REAR)
L (MONO)
Q1201, 1202
Q1207, 1208 BUFFER
Q1204 BUFFER
IC203 AUDIO OUT
L IN
L OUT
J1201 VIDEO
L (MONO)
MONITOR OUT
HEADPHONE
CN251
SP L
SP R
Q1265 L MUTE
Q210 L SP MUTE
CN104 (2/2)
EXTA (MONO)
JR104
JW164
CN103
R
G
B
IK
TU101
AGC
TU
U/V
L/H
IF
Q402 IF BUFFER
SWF401
Q403, 404 FILTER
IC001 µ-COM
MUTE
Q202 MUTE
+7V
Q303 G BUFFER
IC003 MEMORY
Q109 VC AMP
Q110 VC FILTER
Q108 BUFFER
KEY1
KEY2
HSYNC
TV SYNC
Q031 BUFFER
IC004 IR DET
SIRCS
IC002 +5V REG
RESET
EXTAL
XTAL
X101
TIMER
RESP/NICAM
D901 TIMER
Q902 LED DRIVE
Q903 LED DRIVE
NICAM ST/BY
TSW0
TSW1
IC401 SYS-SEL
B/G
M
D/K
I
S901
PROG+
AUTO PROGR
S902
PROG−
MANUAL PROGR
S903
VOL+
TV SYS
VOL−
SELECT
S904
TV/VIDEO
COL SYS
S905
IICLK0
IIDAT0
STBY
BLK
BRT ABL
VPULSE
VSYNC
HDSW
IICLK1
IIDAT1
IC300 BUS CONTROL TV PROCESSOR
CVBS IN
IF IN
AGC
CVES IN
SSCP/FBT
IF OUT
BY
R-Y
CVBS OUT
SECAM
HOR OUT
EAST/WEST
VERT POS
VERT NEG
BLK/STC
B-Y
ABL
EHTX-RAY
SCL
SDA
X358 3.58MHz
X443 4.43MHz
3.58
4.43/3.58
KV-G25M11 ONLY
Q302 BUFFER
Q405-410 SYNC FILTER
Q413, 415, 41
SYNC FILTER
IC354
IC35
D1505
D591
CN104 (2/2)
SIF
CN106
VIDEO
A1 (SIF)
CN1201
Q1204 SIF AMP
Q1203 AMP
Q1202 BUFFER
IC1204 AUDIO SW
IC1203 AUDIO OUT
DIC VOL ATT
PRE AMP
Q1201 AMP
IC1202 NLCAM DEMODULATOR
AF1
CF1203 5.5MHz
CF1202 6.5MHz
CF1201 4.5MHz
CF1204 6.0MHz
SW1
SW2
EXT AUDIO
IC1205 NICAM DECODER
DAC1
DAC3
DAC2
IC1201 +5V REG
+9V
KV-G25M11 ONLY
V1 (TELE TEXT)
IC01 MICRO PROCESSOR
IC02 TEXT-DECODER
Q01 RESET
RST
XW1
P3.7
P3.6
P0.7
P0.6
P0.5
P0.4
CVBS
CLK OUT
OSC IN
OSC OUT
X01
BLAN
Q06 R OUT
Q04 G OUT
Q03 B OUT
Q05 BUFF
Q08 BLK OUT
Q07 +5V REG
Q02, 09 STAND-BY
CN01


C (RGB OUT)
Q712
R DRIVE
Q706
R AMP
Q703
R OUT
Q709
IK LIMIT
Q711
G DRIVE
Q705
G AMP
Q702
G OUT
Q708
IK LIMIT
Q710
B DRIVE
Q704
B AMP
Q701
B OUT
Q707
IK LIMIT
Q714
BIAS
+9V
J701
RV701
G2
1000V
200V
H1
H2
CN701
V901
PICTURE TUBE
J1201
VIDEO
L (MONO)
MONITOR
OUT
J251
HEADPHONE
CN251
SP L
SP R
Q210
L SP MUTE
CN103
CN703
R
G
B
IK
IC300
CONTROL
PROCESSOR
R
G
B
IK
CVES IN
IF OUT
BY
R-Y
CVBS OUT
SECAM
HOR OUT
EAST/WEST
VERT POS
VERT NEG
BLK/STC
B-Y
R-Y
ABL
EHTX-RAY
Q405~410
SYNC
FILTER
Q411, 412, 414, 416
SYNC
FILTER
Q413, 415, 417
SYNC
FILTER
Q418
SYNC
FILTER
KV-G25M11 ONLY
Q302
BUFFER
IC354 SECAM
IC351 1HDL
D1505
Q1513
V SAW
D591
Q561
X RAY
D561
+135V
T601 SRT
+18V
+11V
+B
D601
L605 LFT
S601 POWER
F601
Q601
PC SW
IC601 REG SW
OVP
DRIVE
LATCH
OSC
IC603 PHOTO COUPLER
IC602 ERROR AMP
CN801
AC IN
CN1602
F1601
T1602
T1601
AC IN
F1 (POWER)
KV-G25M1 (RUSS) ONLY
T851 FBT
+135V
-13V
+15V
FV
HV
CN851
200V
1000V
H1
Q030
H PROT
D801, 891
DUMPER
Q801
H DRIVE
T801
Q802
H OUT
IC801 (2/2)
PIN CONT
Q821
PIN OUT
L804
S801
H SENT
IC801 (1/2)
PIN CONT
IC561 V OUT
DY1
H+
H-
V-
V+
HDY
VDY
DY ASS'Y

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ = 100Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)
- -[FW]- : nonflammable resistor.
- △ : internal component.
- ☐ : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  ( ) : SECAM
  ⟨ ⟩ : NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- ✱ : Can not be measured.
- Circled numbers are waveform reference.
- ━━━ : B + bus.
- ━ ━ ━ : B – bus.
- ➡ : signal path.

Reference Information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

PRINTED WIRING BOARD

A [SYS CONTROLLER, TU, MEMORY, IF, Y/C JUNGLE
H/V OUT, POWER SUPPLY, SECAM DECODER, AUDIO/VIDEO INPUT]

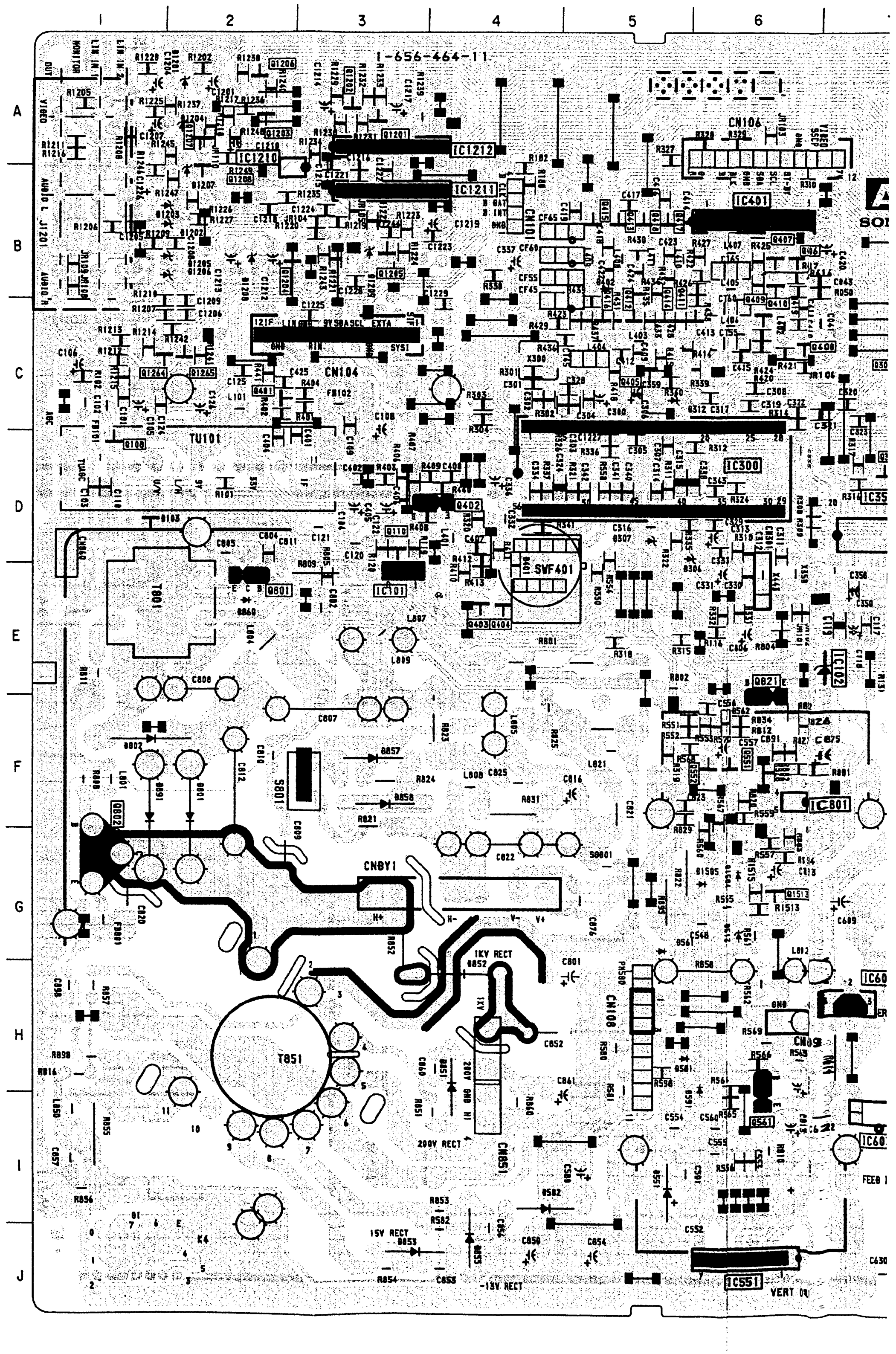
A BOARD

IC	
IC001	D-11
IC002	E-10
IC003	E-11
IC004	I-13
IC102	E-7
IC203	B-10
IC300	D-6
IC351	D-8
IC354	D-7
IC401	B-6
IC521	E-8
IC551	J-6
IC601	J-8
IC602	H-7
IC603	I-7
IC801	F-6
IC1210	A-2

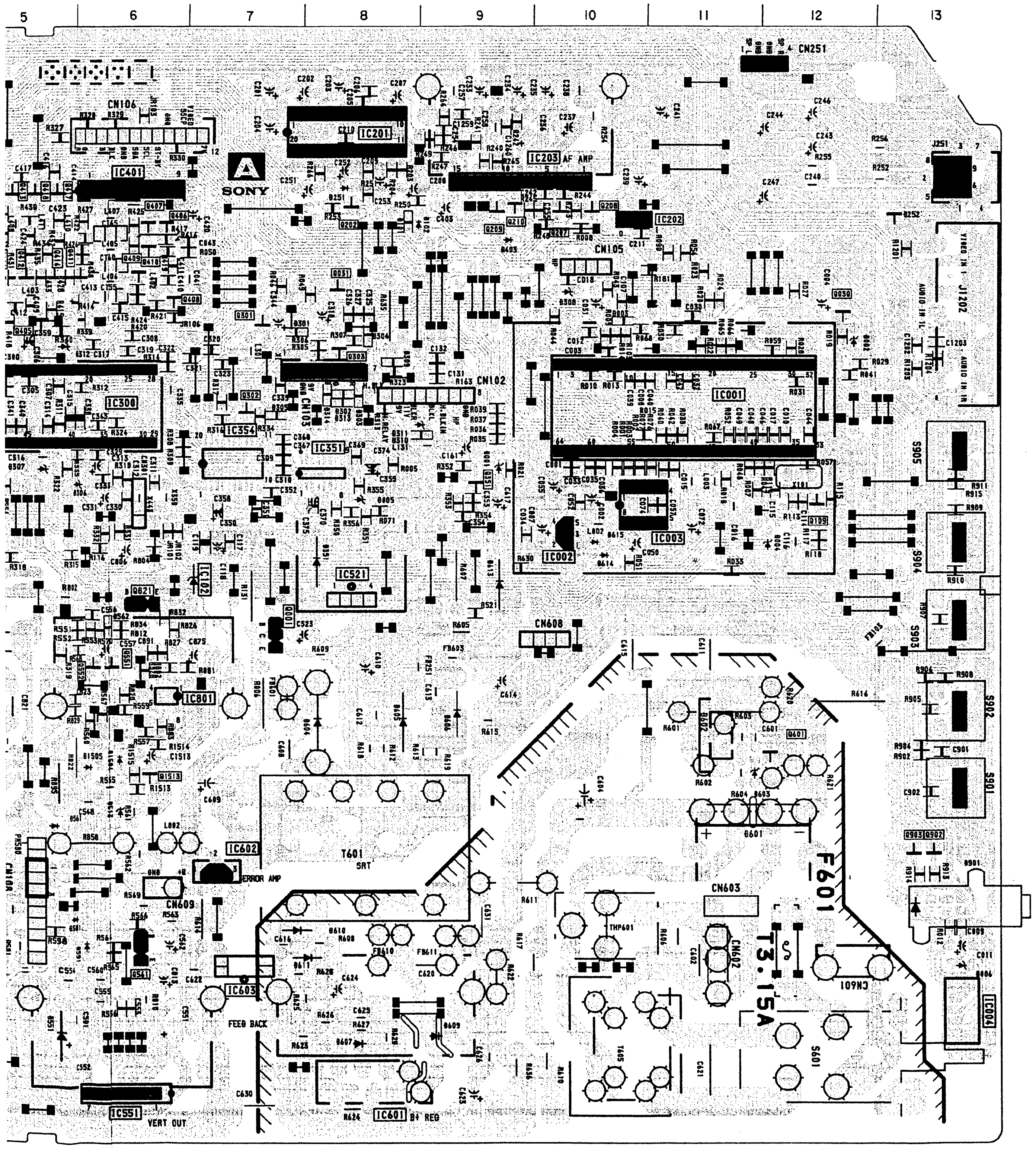
TRANSISTOR	
Q030	C-12
Q031	C-8
Q108	D-1
Q109	E-12
Q110	D-3
Q202	B-8
Q207	B-10
Q208	B-10
Q210	B-9
Q301	C-7
Q302	D-7
Q303	C-8
Q402	D-4
Q403	E-4
Q404	E-4
Q405	C-5
Q406	B-6
Q407	B-6
Q408	C-6
Q409	C-6
Q410	B-6
Q411	C-6
Q412	C-5
Q413	B-5
Q414	C-5
Q415	B-5
Q416	C-5
Q417	B-5
Q418	B-5
Q561	I-6
Q601	G-12
Q801	E-2
Q802	G-1
Q821	E-6
Q902	H-13
Q903	H-13
Q1201	A-3
Q1202	A-3
Q1203	A-2
Q1204	B-2
Q1207	A-2
Q1208	B-2
Q1265	C-2
Q1513	G-6

DIODE	
D001	D-9
D002	C-12
D003	C-10
D004	E-12
D005	E-8
D101	B-8
D102	B-9
D103	D-1
D251	B-8
D252	B-13
D301	C-7
D302	D-8
D303	D-8
D304	C-8
D305	D-7
D306	D-6
D307	D-5
D308	C-10
D310	D-8
D311	D-8
D312	C-5
D313	D-8
D314	D-8
D351	E-8
D401	D-4
D402	B-5
D403	B-9
D513	G-6
D551	I-5
D561	G-5
D591	H-6
D601	G-11
D602	G-11
D603	G-11
D604	G-8
D605	G-8
D606	F-9
D607	I-8
D609	I-9
D610	H-7
D611	I-8
D801	F-2
D802	F-1
D851	H-4
D852	H-4
D853	J-3
D855	J-4
D857	F-3
D858	F-3
D860	E-2
D891	F-1
D901	H-13
D1201	A-2
D1202	B-2
D1207	B-2
D1208	B-2
D1504	G-6
D1505	G-6

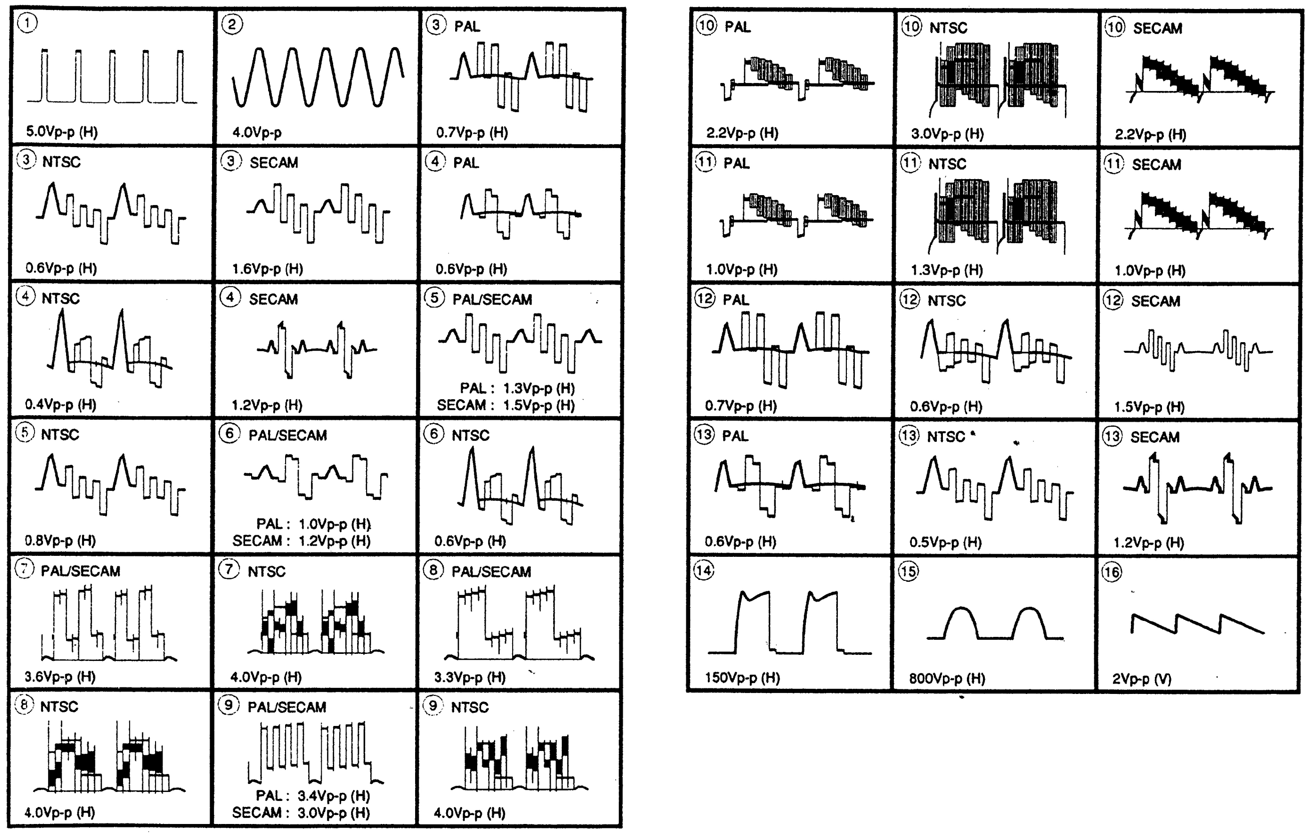
– A Board –

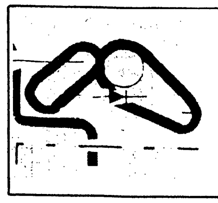


EO INPUT


5
6
7
8
9
10
11
12
13
CN251
CN106
IC401
IC201
IC203 AF AMP
IC202
A
SONY
CN105
CN102
IC001
IC300
IC354
IC351
IC521
IC003
IC002
IC102
CN608
IC801
T601
SRT
IC602
ERROR AMP
CN609
IC603
FEED BACK
IC551
VERT OUT
IC601
B+ REG
CN603
CN602
F601
T3.15A
CN401
S905
S904
S903
S902
S901
IC004

A BOARD WAVEFORMS

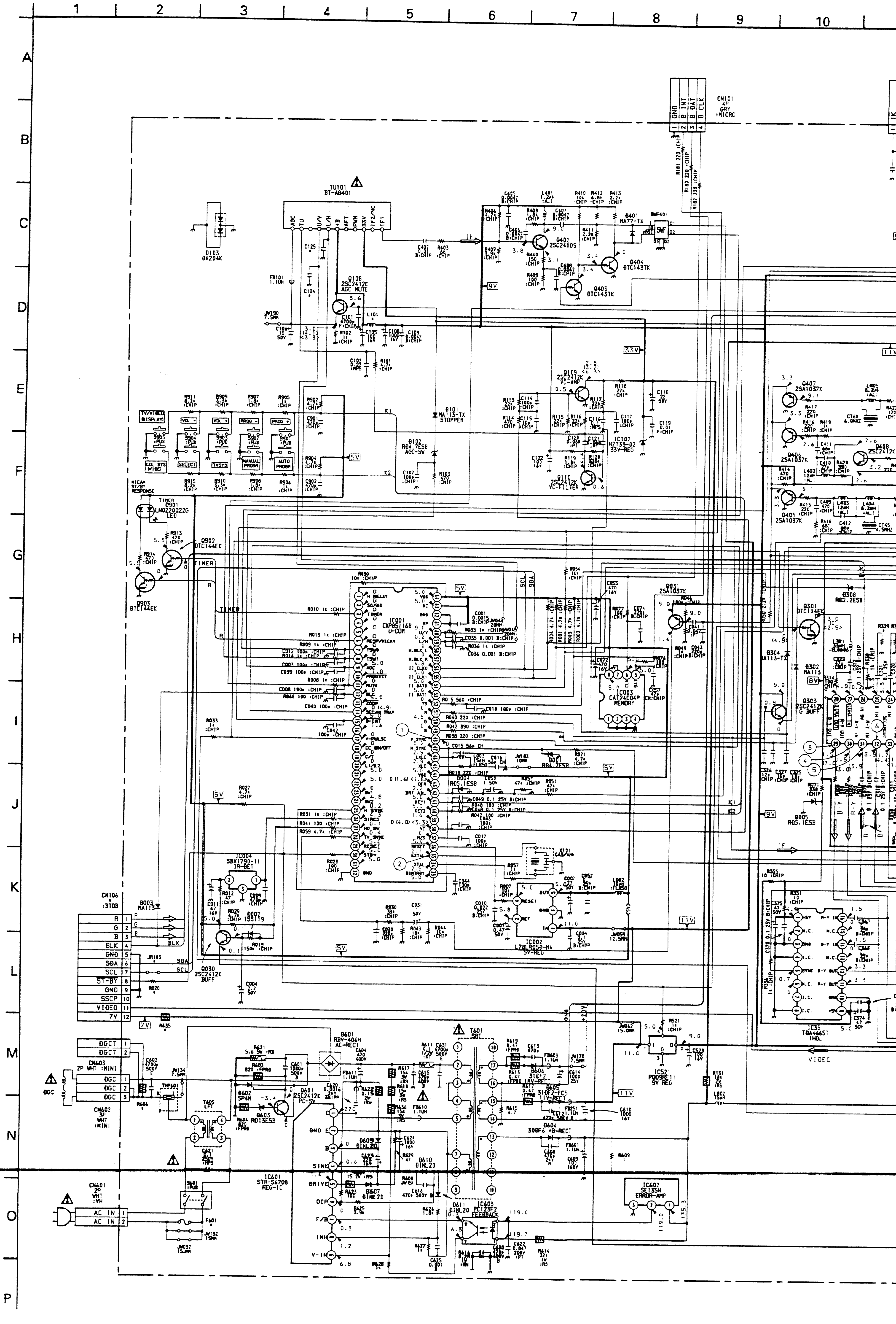

①
5.0Vp-p (H)
②
4.0Vp-p
③ PAL
0.7Vp-p (H)
③ NTSC
0.6Vp-p (H)
③ SECAM
1.6Vp-p (H)
④ PAL
0.6Vp-p (H)
④ NTSC
0.4Vp-p (H)
④ SECAM
1.2Vp-p (H)
⑤ PAL/SECAM
PAL : 1.3Vp-p (H)
SECAM : 1.5Vp-p (H)
⑤ NTSC
0.8Vp-p (H)
⑥ PAL/SECAM
PAL : 1.0Vp-p (H)
SECAM : 1.2Vp-p (H)
⑥ NTSC
0.6Vp-p (H)
⑦ PAL/SECAM
3.6Vp-p (H)
⑦ NTSC
4.0Vp-p (H)
⑧ PAL/SECAM
3.3Vp-p (H)
⑧ NTSC
4.0Vp-p (H)
⑨ PAL/SECAM
PAL : 3.4Vp-p (H)
SECAM : 3.0Vp-p (H)
⑨ NTSC
4.0Vp-p (H)
⑩ PAL
2.2Vp-p (H)
⑩ NTSC
3.0Vp-p (H)
⑩ SECAM
2.2Vp-p (H)
⑪ PAL
1.0Vp-p (H)
⑪ NTSC
1.3Vp-p (H)
⑪ SECAM
1.0Vp-p (H)
⑫ PAL
0.7Vp-p (H)
⑫ NTSC
0.6Vp-p (H)
⑫ SECAM
1.5Vp-p (H)
⑬ PAL
0.6Vp-p (H)
⑬ NTSC
0.5Vp-p (H)
⑬ SECAM
1.2Vp-p (H)
⑭
150Vp-p (H)
⑮
800Vp-p (H)
⑯
2Vp-p (V)

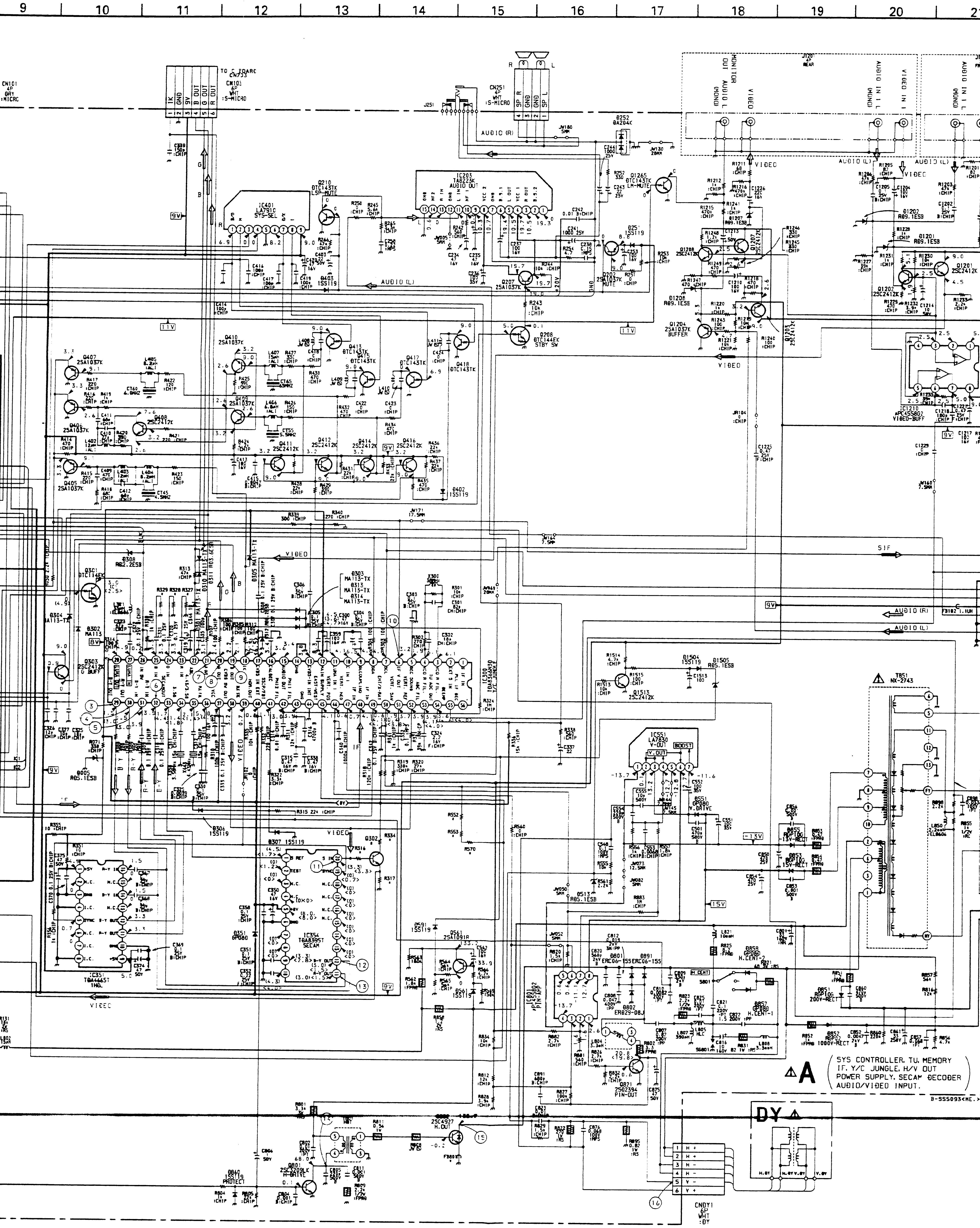


NOTE:

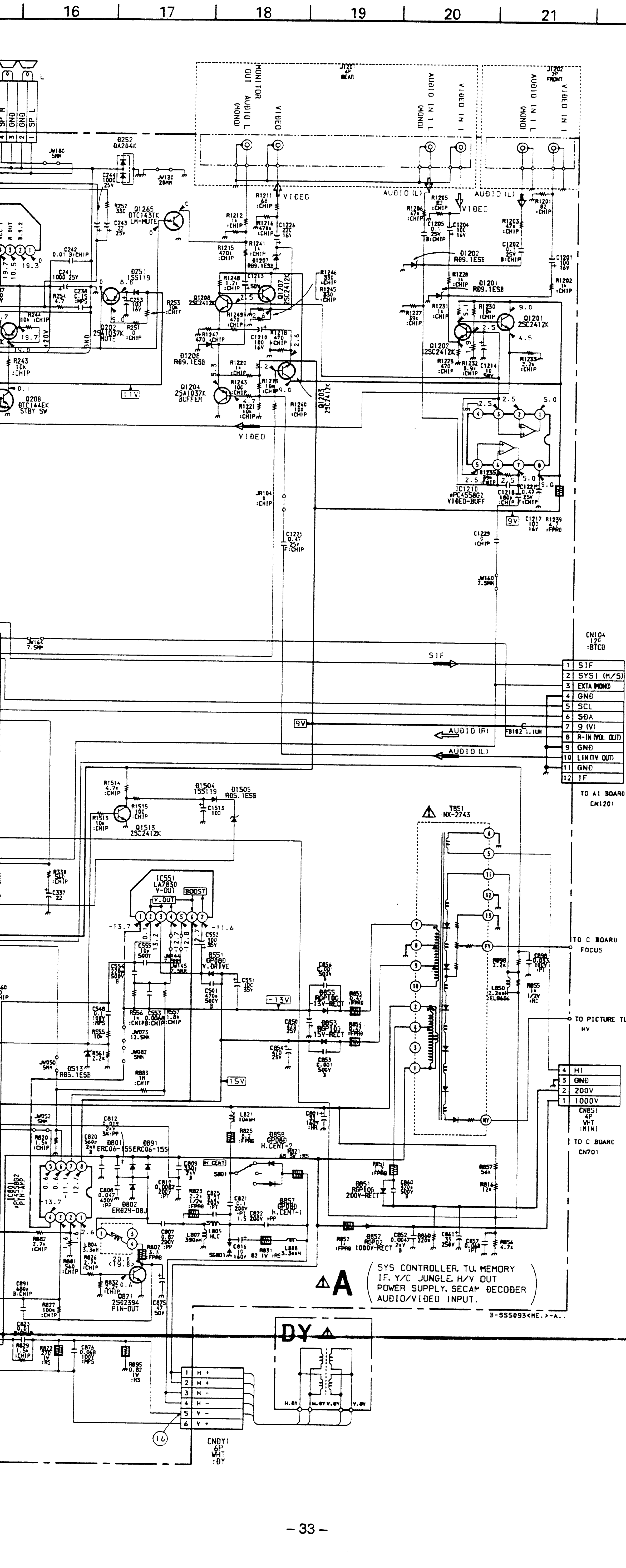
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

(1) Schematic Diagram of A Board


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
CN101 4P GRY :MICRC
GND
B INT
B DAT
B CLK
TU101
BT-A6401
D103
DA204K
Q106
2SC2412K
AGC MUTE
Q402
2SC2410S
Q404
DTC143TK
Q403
DTC143TK
D401
MA77-TX
SWF401
Q109
2SC2412K
VC-AMP
D101
MA113-TX
STOPPER
D102
RD4.7ESB
AGC-SW
IC102
HZ733-02
33V-REG
Q110
2SC2412K
VC-FILTER
TV/VIDEO
DISPLAY
VOL -
VOL +
PROG -
PROG +
COL SYS
WIDE
SELECT
TV SYS
MANUAL PROGR
AUTO PROGR
NICAM ST/BY RESPONSE
TIMER
D901
LN0220022G
LED
Q902
DTC144EK
Q901
DTC144EK
IC001
CXP85116B
U-COM
IC003
CAT24C04P
MEMORY
Q031
2SA1037K
IC004
SBX1790-11
IR-DET
Q030
2SC2412K
BUFF
D002
1SS119
IC002
L78LR05D-MA
5V-REG
CN106 :BTOB
R
G
B
BLK
GND
SDA
SCL
ST-BY
GND
SSCP
VIDEO
7V
DGCT
DGCT
CN603 2P WHT :MINI
DGC
DGC
DGC
CN602 3P WHT :MINI
T605 LFT
D601
RBV-406H
AC-RECT
Q601
2SC2412K
PC-SV
D602
SP4M
D603
RD13ESB
T601
SRT
IC601
STR-S6708
REG-IC
D606
31EF2
IAV-REG
D605
31EF2-FC5
11V-RECT
D604
300F6
B-RECT
IC521
PQ09RE11
9V REG
CN601 2P WHT :VH
AC IN
AC IN
S601
F601
IC602
SE135N
ERROR-AMP
IC603
PC123F2
FEEDBACK
Q407
2SA1037K
Q406
2SA1037K
Q408
2SC2412K
Q405
2SA1037K
Q301
DTC114EK
D308
RD2.2ESB
D304
MA113-TX
D302
MA113
Q303
2SC2412K
G BUFF
D005
RD5.1ESB
IC351
TDA4665T
1HDL
5V
9V
11V
33V


9
10
11
12
13
14
15
16
17
18
19
20
CN101 4P GRY :MICRO
TO S BOARD CN725
CN103 6P WHT :S-MICRO
CN251 4P WHT :S-MICRO
J251
J1201 4P REAR
MONITOR OUT AUDIO L (MONO)
VIDEO
AUDIO IN L (MONO)
VIDEO IN 1
AUDIO IN L (MONO)
AUDIO (R)
AUDIO (L)
VIDEO
IC401 LA7910 SYS-SEL
IC203 TA8223K AUDIO OUT
Q210 DTC143TK LSP-MUTE
Q1265 DTC143TK LM-MUTE
Q251 1SS119
Q202 2SA1037K MUTE
Q207 2SA1037K
Q208 DTC144EK STBY SW
D252 DA204K
Q1208 2SC2412K
Q1207 2SC2412K
Q1206 RD9.1ESB
Q1204 2SA1037K BUFFER
Q1203 2SC2412K
Q1202 RD9.1ESB
Q1201 RD9.1ESB
Q1201 2SC2412K
Q1202 2SC2412K
IC1210 μPC4558G2 VIDEO-BUFF
Q407 2SA1037K
Q406 2SA1037K
Q405 2SA1037K
Q408 2SC2412K
Q410 2SA1037K
Q409 2SA1037K
Q411 2SC2412K
Q412 2SC2412K
Q413 DTC143TK
Q414 2SC2412K
Q416 2SC2412K
Q417 DTC143TK
Q418 DTC143TK
D402 1SS119
D403 1SS119
Q301 DTC114EK
Q303 2SC2412K G BUFF
D304 MA113-TX
D302 MA113
D305 MA113-TX
D308 RD2.2ESB
D303 MA113-TX
D313 MA113-TX
D314 MA113-TX
IC300 TDA8362A Y/C JUNGLE
X300
D305 RD5.1ESB
D306 1SS119
D307 1SS119
Q302
IC351 TDA4665T 1HD.
IC354 TDA8395T SECAM
D351 GP08D
IC551 LA7830 V-OUT
BOOST
D551 GP08D V.DRIVE
Q1513 2SC2412K
D1504 1SS119
D1505 RD5.1ESB
T851 NX-2743
D513 RD5.1ESB
D591 1SS119
Q561 2SA1091R
D561 1SS119
IC801 PIN-AMP
D801 ERC06-15S
D802 ER829-08J
D891 ERC06-15S
D857 RGP10G H.CENT-1
D859 GP08D H.CENT-2
D851 RGP10G 200V-RECT
D853 RGP10G 15V-RECT
D855 RGP10G -13V-RECT
Q871 2SD2394 PIN-OUT
Q801 2SC3209LK H-DRIVE
D840 1SS119 PROTECT
Q802 2SC4927 H.OUT
T801
T802
CNDY1 6P WHT :DY
DY
H +
H -
V -
V +
H. DY
V. DY
SIF
9V
8V
11V
-13V
15V
B-555093<ME.>

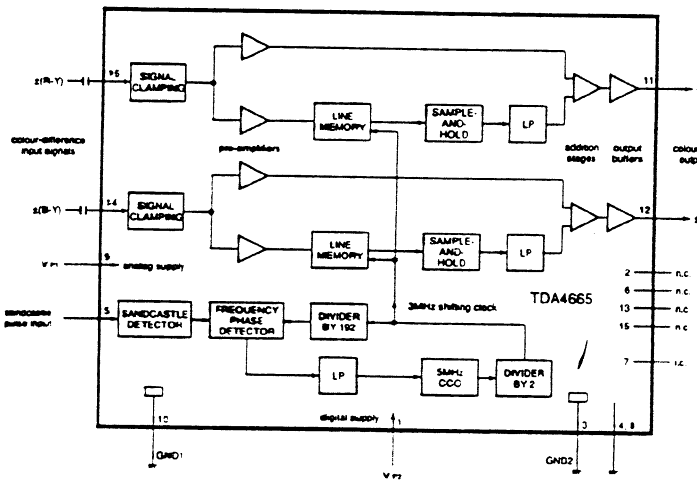
A SYS CONTROLLER, TU, MEMORY IF, Y/C JUNGLE, H/V OUT POWER SUPPLY, SECAM DECODER AUDIO/VIDEO INPUT.


16
17
18
19
20
21
22
23
J1201 4P REAR
MONITOR OUT AUDIO L (MONO)
VIDEO
AUDIO IN L (MONO)
VIDEO IN 1
J1202 2P FRONT
AUDIO IN L (MONO)
VIDEO IN 1
CN104 12P :BTCB
1 SIF
2 SYSI (M/S)
3 EXTA MONO
4 GND
5 SCL
6 SDA
7 9 (V)
8 R-IN (VOL OUT)
9 GND
10 LIN (TV OUT)
11 GND
12 IF
TO A1 BOARD CN1201
T851 NX-2743
TO C BOARD FOCUS
TO PICTURE TUBE HV
1 1000V
2 200V
3 GND
4 H1
CN851 4P WHT :MINI
TO C BOARD CN701
IC551 LA7830 V-OUT
IC1210 μPC4558G2 VIDEO-BUFF
A
SYS CONTROLLER, TU, MEMORY
IF, Y/C JUNGLE, H/V OUT
POWER SUPPLY, SECAM DECODER
AUDIO/VIDEO INPUT.
B-SS5093<ME.>-A..
DY
1 H+
2 H+
3 H-
4 H-
5 Y-
6 Y+
CNDY1 6P WHT :DY

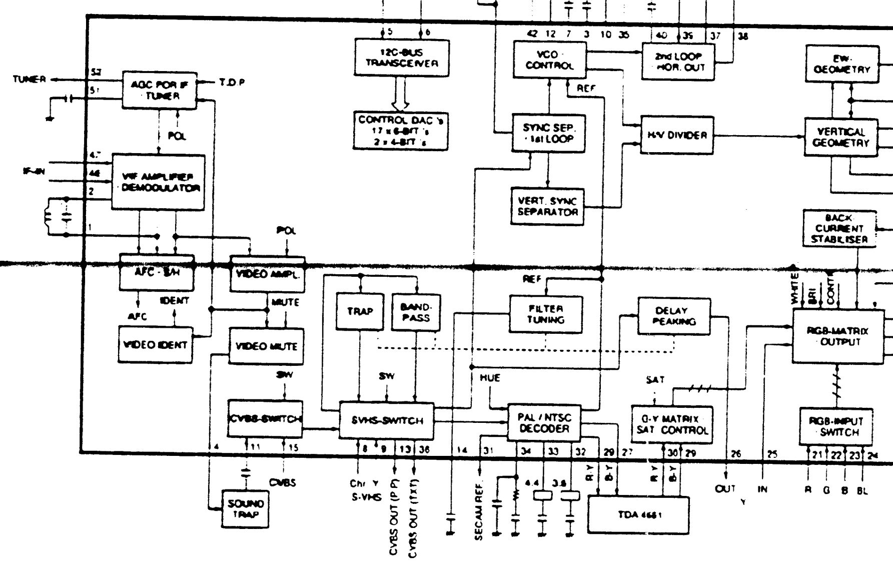
A BOARD * MARK LIST

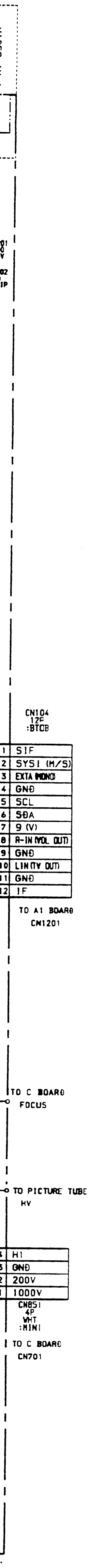
	KV-G25M1(ME)	KV-G25M1(HK)	KV-G25M1(
CN106	NOT USED	NOT USED	NOT US
CN601	TO POWER CORD	TO POWER CORD	TO F1 BOARD
F601	T3.15A	T3.15A	NOT US
FB801	1.1uH	1.1uH	1.9uH
JR103	NOT USED	NOT USED	NOT US
JW032	NOT USED	NOT USED	15MM
JW132	NOT USED	NOT USED	15MM
Q302	NOT USED	NOT USED	NOT US
R020	NOT USED	NOT USED	NOT US
R316	NOT USED	NOT USED	NOT US
R317	NOT USED	NOT USED	NOT US
R327	0 : CHIP	0 : CHIP	0 : CHIP
R328	0 : CHIP	0 : CHIP	0 : CHIP
R329	C : CHIP	0 : CHIP	0 : CHIP
R334	NOT USED	NOT USED	NOT USE
R552	NOT USED	NOT USED	220K : CHIP
R553	NOT USED	NOT USED	0 : CHIP
R570	NOT USED	NOT USED	0 : CHIP
R635	NOT USED	NOT USED	NOT USE

A BOARD IC351 TDA4665T


SIGNAL CLAMPING
LINE MEMORY
SAMPLE-AND-HOLD
LP
pre-amplifiers
addition stages
output buffers
colour-difference input signals
colour-difference output signals
analog supply
sandcastle pulse input
SANDCASTLE DETECTOR
FREQUENCY PHASE DETECTOR
DIVIDER BY 192
3MHz shifting clock
TDA4665
5MHz CCO
DIVIDER BY 2
digital supply
GND1
GND2
n.c.

A BOARD IC300 TDA8366N3D

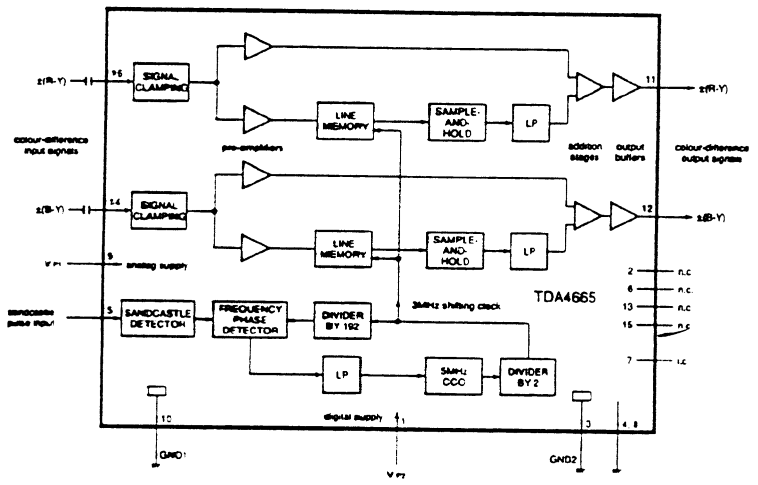

SCL
SDA
HOR DRIVE
TUNER
T.D.P
AGC FOR IF TUNER
I2C-BUS TRANSCEIVER
CONTROL DAC's 17 x 6-BIT's 2 x 4-BIT's
VCO CONTROL
2nd LOOP HOR. OUT
EW-GEOMETRY
SYNC SEP. 1st LOOP
H-V DIVIDER
VERTICAL GEOMETRY
IF-IN
VIF AMPLIFIER DEMODULATOR
VERT. SYNC SEPARATOR
BACK CURRENT STABILISER
POL
AFC - S/H
VIDEO AMPL.
REF
AFC
IDENT
MUTE
VIDEO IDENT
VIDEO MUTE
TRAP
BAND-PASS
FILTER TUNING
DELAY PEAKING
RGB-MATRIX OUTPUT
WHITE
BRI
CONT
SW
HUE
SAT
CVBS-SWITCH
SVHS-SWITCH
PAL / NTSC DECODER
G-Y MATRIX SAT CONTROL
RGB-INPUT SWITCH
CVBS
SOUND TRAP
Chr Y S-VHS
CVBS OUT (P.P)
CVBS OUT (TXT)
SECAM REF.
4.4
3.6
R-Y
B-Y
TDA 4661
OUT
IN
Y
R G B BL


CN104
12P
:BTOB
1 SIF
2 SYS1 (M/S)
3 EXTA MONO
4 GND
5 SCL
6 SDA
7 9 (V)
8 R-IN (VOL OUT)
9 GND
10 LIN (TV OUT)
11 GND
12 IF
TO A1 BOARD
CN1201
TO C BOARD
FOCUS
TO PICTURE TUBE
HV
H1
GND
200V
1000V
CN851
4P
WHT
:MINI
TO C BOARD
CN701

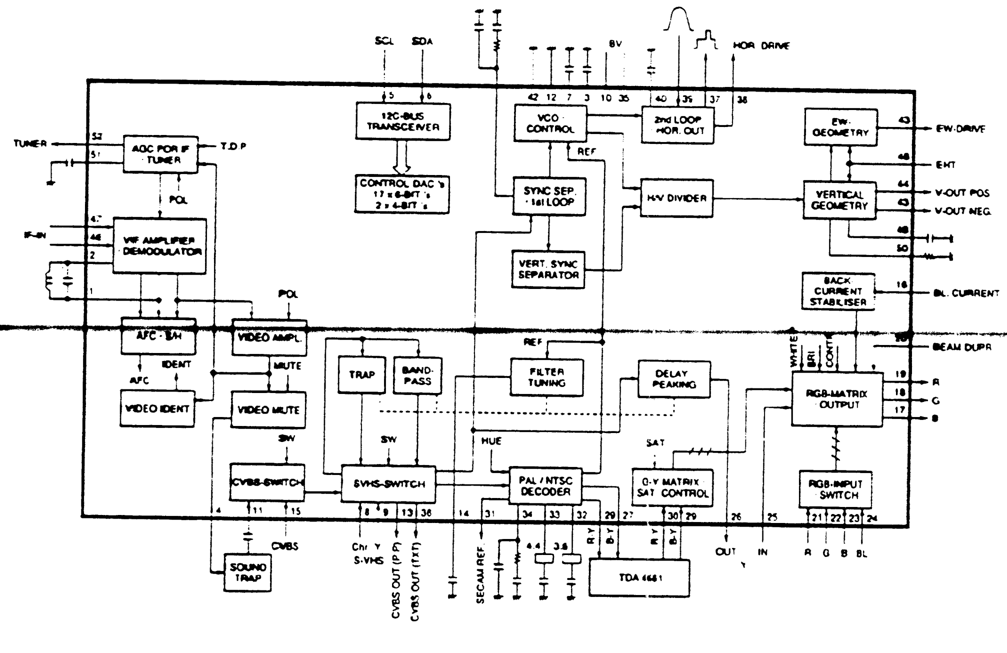
A BOARD * MARK LIST

	KV-G25M1(ME)	KV-G25M1(HK)	KV-G25M1(RUSS)	KV-G25M11
CN106	NOT USED	NOT USED	NOT USED	12P :BTOB
CN601	TO POWER CORD	TO POWER CORD	TO F1 BOARD CN1602	TO POWER CORD
F601	T3.15A	T3.15A	NOT USED	T3.15A
FB801	1.1uH	1.1uH	1.9uH	1.1uH
JR103	NOT USED	NOT USED	NOT USED	0 : CHIP
JW032	NOT USED	NOT USED	15MM	NOT USED
JW132	NOT USED	NOT USED	15MM	NOT USED
Q302	NOT USED	NOT USED	NOT USED	2SC2412K
R020	NOT USED	NOT USED	NOT USED	100 : CHIP
R316	NOT USED	NOT USED	NOT USED	4.7K : CHIP
R317	NOT USED	NOT USED	NOT USED	1K : CHIP
R327	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R328	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R329	0 : CHIP	0 : CHIP	0 : CHIP	100 : CHIP
R334	NOT USED	NOT USED	NOT USED	470 : CHIP
R552	NOT USED	NOT USED	220K : CHIP	220K : CHIP
R553	NOT USED	NOT USED	0 : CHIP	0 : CHIP
R570	NOT USED	NOT USED	0 : CHIP	0 : CHIP
R635	NOT USED	NOT USED	NOT USED	22 2W :RS

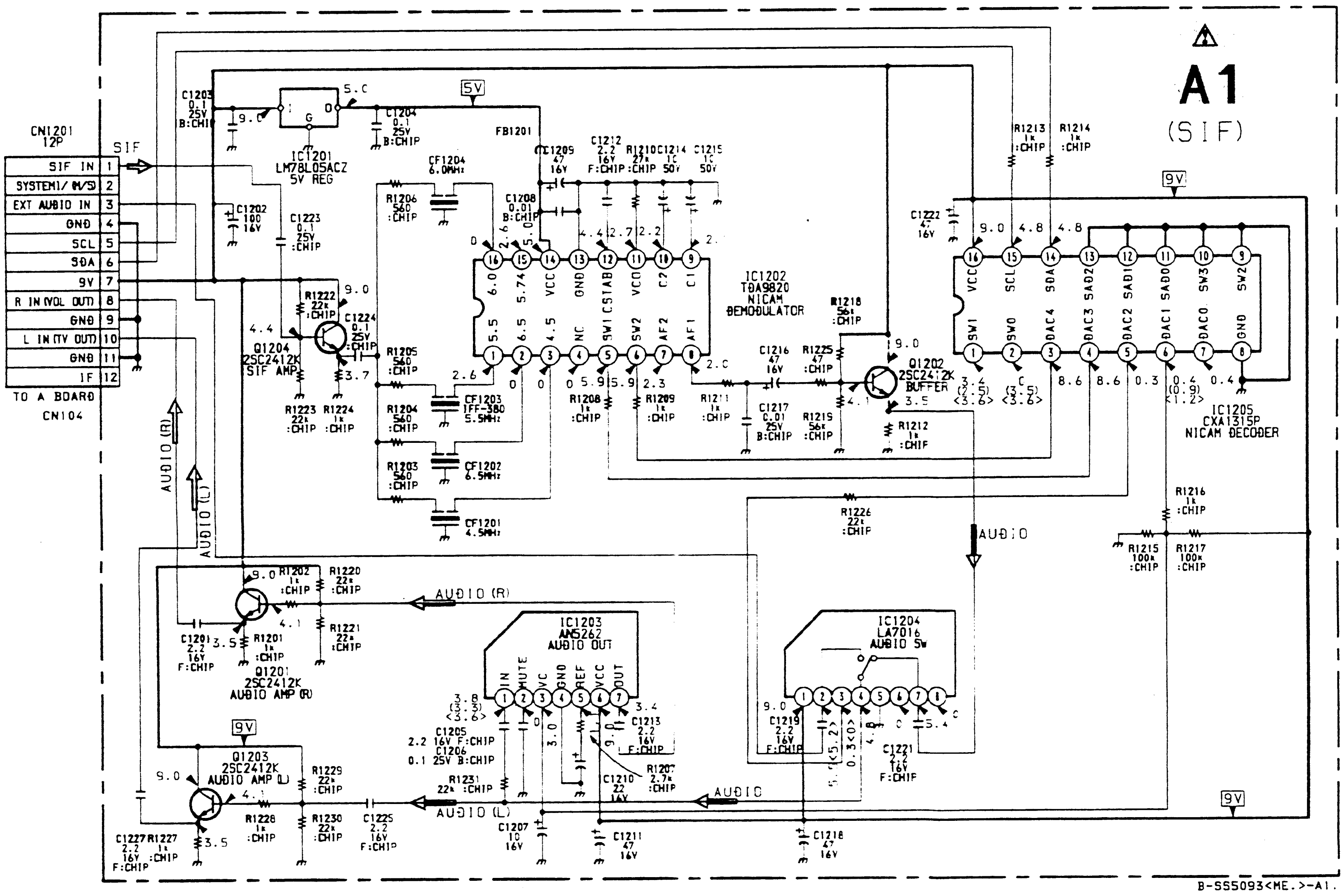
A BOARD IC351 TDA4665T

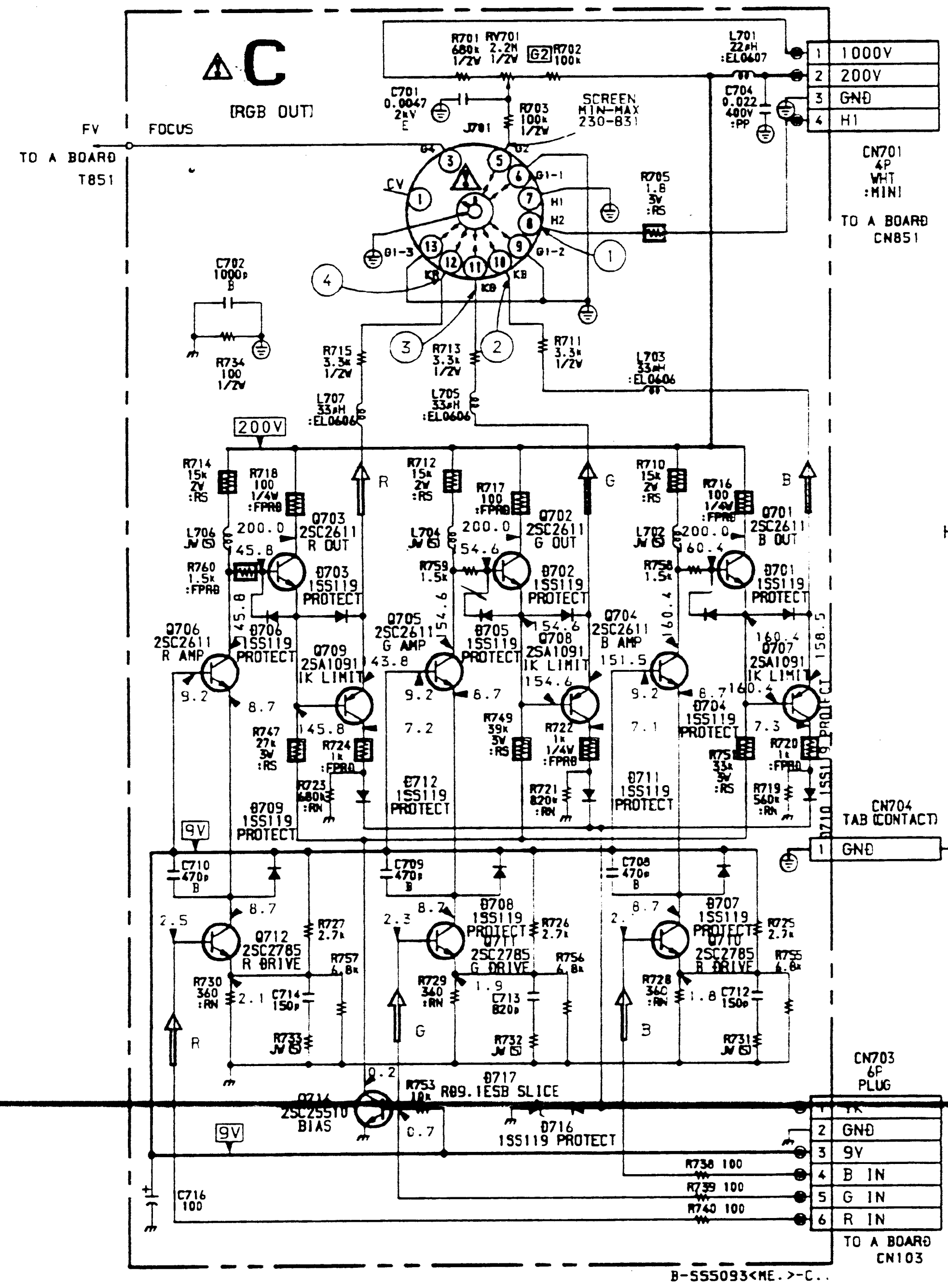

±(R-Y)
16
SIGNAL CLAMPING
LINE MEMORY
SAMPLE-AND-HOLD
LP
11
±(R-Y)
colour-difference input signals
pre-amplifiers
addition stages
output buffers
colour-difference output signals
±(B-Y)
14
SIGNAL CLAMPING
LINE MEMORY
SAMPLE-AND-HOLD
LP
12
±(B-Y)
9
analog supply
sandcastle pulse input
5
SANDCASTLE DETECTOR
FREQUENCY PHASE DETECTOR
DIVIDER BY 192
3MHz shifting clock
TDA4665
2 n.c
6 n.c.
13 n.c
15 n.c
7 i.c
LP
3MHz CCO
DIVIDER BY 2
10
digital supply
1
3
4, 8
GND1
GND2

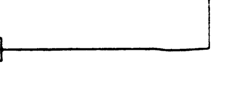
A BOARD IC300 TDA8366N3D


SCL
SDA
8V
HOR DRIVE
5
6
42 12 7 3 10 35
40 39 37 38
I2C-BUS TRANSCEIVER
CONTROL DAC's 17 x 6-BIT's 2 x 4-BIT's
VCO CONTROL
REF
2nd LOOP HOR. OUT
EW-GEOMETRY
43 EW-DRIVE
48 EHT
44 V-OUT POS
43 V-OUT NEG
48
50
TUNER
52
51
AGC FOR IF TUNER
T.D.P
POL
47
46
IF-IN
2
1
VIF AMPLIFIER DEMODULATOR
SYNC SEP. 1st LOOP
H/V DIVIDER
VERTICAL GEOMETRY
VERT. SYNC SEPARATOR
BACK CURRENT STABILISER
16 BL. CURRENT
POL
AFC - S/H
VIDEO AMPL.
IDENT
MUTE
AFC
VIDEO IDENT
VIDEO MUTE
TRAP
BAND-PASS
REF
FILTER TUNING
DELAY PEAKING
WHITE
BRI
CONT
20 BEAM DUPR
19 R
18 G
17 B
RGB-MATRIX OUTPUT
SW
SW
HUE
SAT
CVBS-SWITCH
SVHS-SWITCH
PAL / NTSC DECODER
G-Y MATRIX SAT CONTROL
RGB-INPUT SWITCH
4 11 15 8 9 13 36 14 31 34 33 32 29 27 30 29 26 25 21 22 23 24
CVBS
SOUND TRAP
Chr Y
S-VHS
CVBS OUT (P.P)
CVBS OUT (TXT)
SECAM REF.
4.4
3.6
R-Y
B-Y
R-Y
B-Y
TDA 4661
OUT
IN
R G B BL

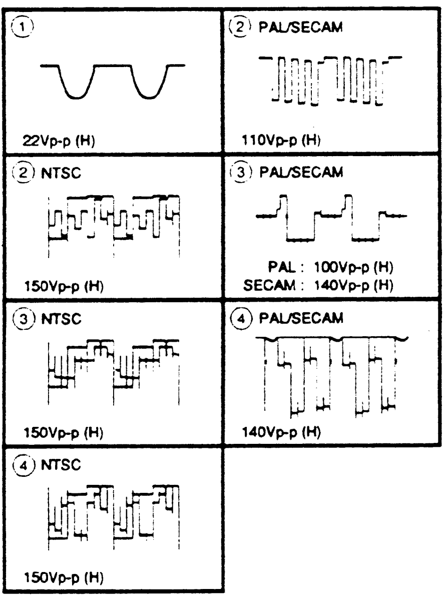
(2) Schematic Diagrams of A1, C, F1 and V1 Boards

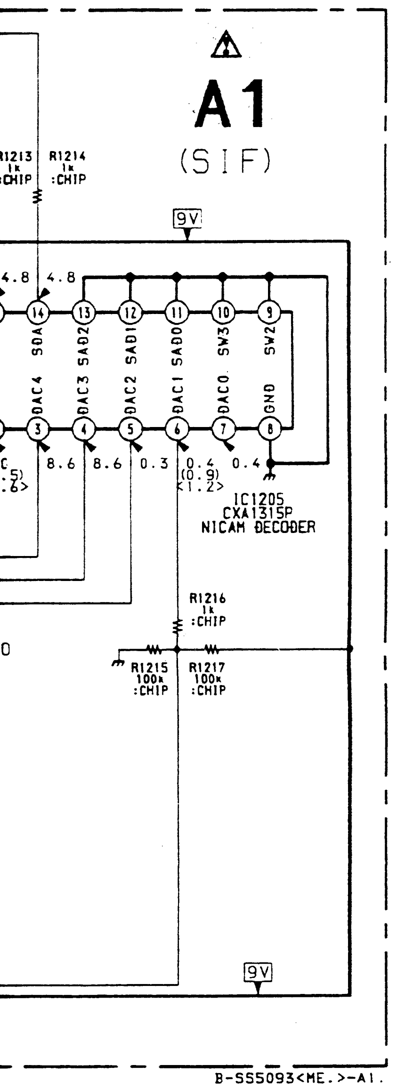

A1
(SIF)
CN1201 12P
SIF IN 1
SYSTEM1/M/S 2
EXT AUDIO IN 3
GND 4
SCL 5
SDA 6
9V 7
R IN (VOL OUT) 8
GND 9
L IN (TV OUT) 10
GND 11
IF 12
TO A BOARD CN104
IC1201 LM78L05ACZ 5V REG
IC1202 TDA9820 NICAM DEMODULATOR
IC1205 CXA1315P NICAM DECODER
IC1203 AN5262 AUDIO OUT
IC1204 LA7016 AUDIO SW
Q1204 2SC2412K SIF AMP
Q1202 2SC2412K BUFFER
Q1201 2SC2412K AUDIO AMP (R)
Q1203 2SC2412K AUDIO AMP (L)
CF1204 6.0MHz
CF1203 IFF-380 5.5MHz
CF1202 6.5MHz
CF1201 4.5MHz
FB1201
AUDIO (R)
AUDIO (L)
AUDIO
5V
9V
B-SS5093<ME.>-A1.


C
(RGB OUT)
FV
TO A BOARD T851
FOCUS
1000V
200V
GND
H1
CN701 4P WHT :MINI
TO A BOARD CN851
SCREEN MIN-MAX 230-831
Q703 2SC2611 R OUT
Q702 2SC2611 G OUT
Q701 2SC2611 B OUT
Q706 2SC2611 R AMP
Q705 2SC2611 G AMP
Q704 2SC2611 B AMP
Q709 2SA1091 IK LIMIT
Q708 2SA1091 IK LIMIT
Q707 2SA1091 IK LIMIT
D703 1SS119 PROTECT
D702 1SS119 PROTECT
D701 1SS119 PROTECT
Q712 2SC2785 R DRIVE
Q711 2SC2785 G DRIVE
Q710 2SC2785 B DRIVE
Q714 2SC2510 BIAS
D717 RD9.1ESB SLICE
D716 1SS119 PROTECT
CN704 TAB (CONTACT)
CN703 6P PLUG
1 IK
2 GND
3 9V
4 B IN
5 G IN
6 R IN
TO A BOARD CN103
200V
9V
B-SS5093<ME.>-C..

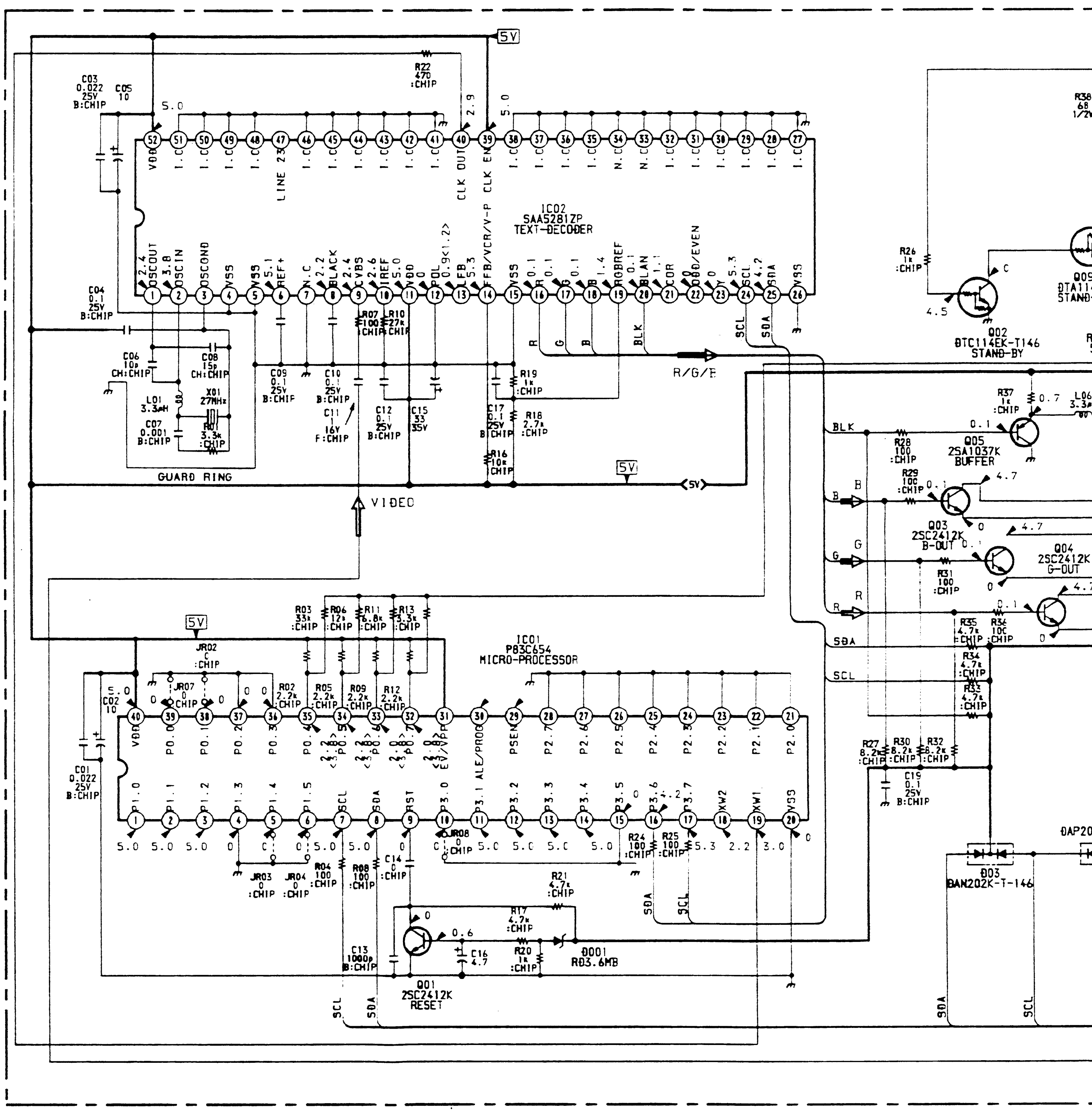

KG KB G2
V901 PICTURE TUBE
H
CV KR G1 G4 HV
TO A BOARD T851

C BOARD WAVEFORMS

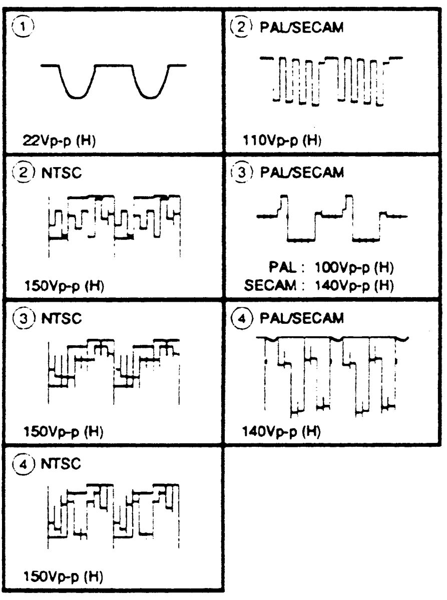



A1
(SIF)
IC1205
CXA1315P
NICAM DECODER
R1213
R1214
R1215
R1216
R1217
9V
SDA
SAD2
SAD1
SAD0
SW3
SW2
DAC4
DAC3
DAC2
DAC1
DAC0
GND
B-SS5093<ME.>-A1.

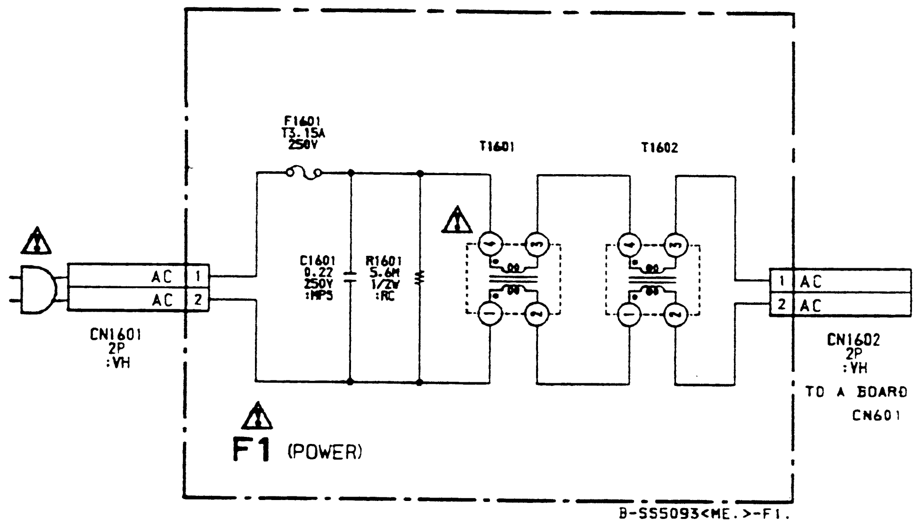
(KV-G25M11 only)


IC02
SAA5281ZP
TEXT-DECODER
IC01
P83C654
MICRO-PROCESSOR
5V
GUARD RING
VIDEO
R/G/B
X01
27MHz
L01
3.3μH
Q01
2SC2412K
RESET
Q02
DTC114EK-T146
STAND-BY
Q03
2SC2412K
B-OUT
Q04
2SC2412K
G-OUT
Q05
2SA1037K
BUFFER
D001
RD3.6MB
D03
DAN202K-T-146
BLK
SDA
SCL
CLK OUT
CLK EN
LINE 23
VDD
VSS
OSCOUT
OSCIN
OSCGND
BLACK
CVBS
IREF
POL
FB/VCR/V-P
RGBREF
BLAN
COR
ODD/EVEN
ALE/PROG
PSEN
RST
XW1
XW2

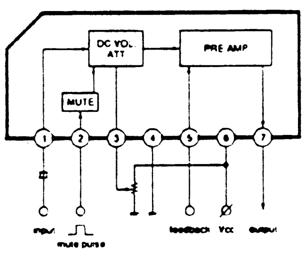
C BOARD WAVEFORMS

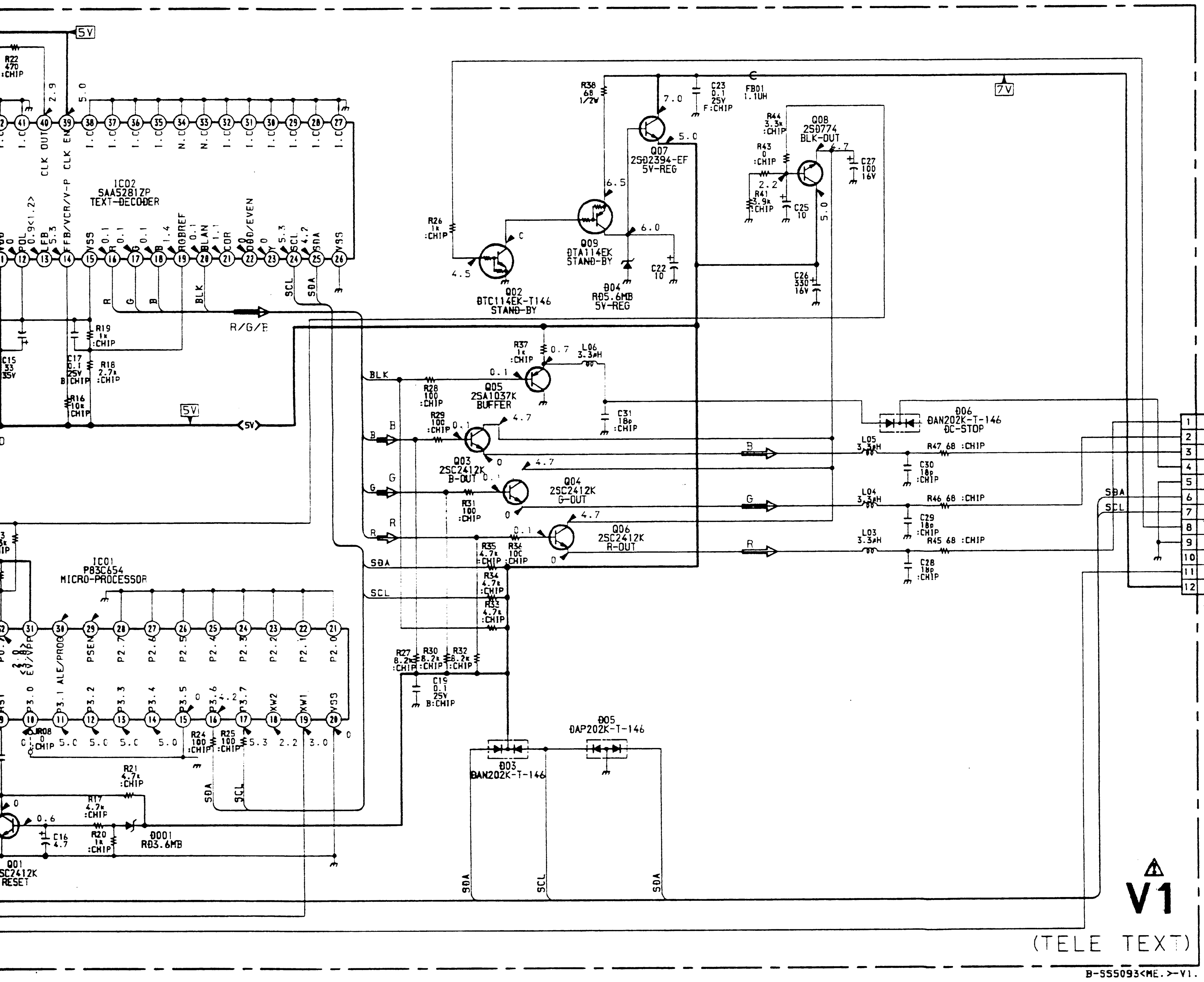


(KV-G25M1 (RUSS) only)

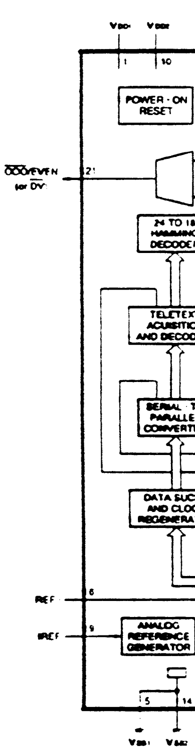

F1601
T3.15A
250V
T1601
T1602
C1601
0.22
250V
:MPS
R1601
5.6M
1/2W
:RC
AC 1
AC 2
CN1601
2P
:VH
1 AC
2 AC
CN1602
2P
:VH
TO A BOARD
CN601
F1 (POWER)
B-SS5093<ME.>-F1.

A1 BOARD IC1203 AN5262

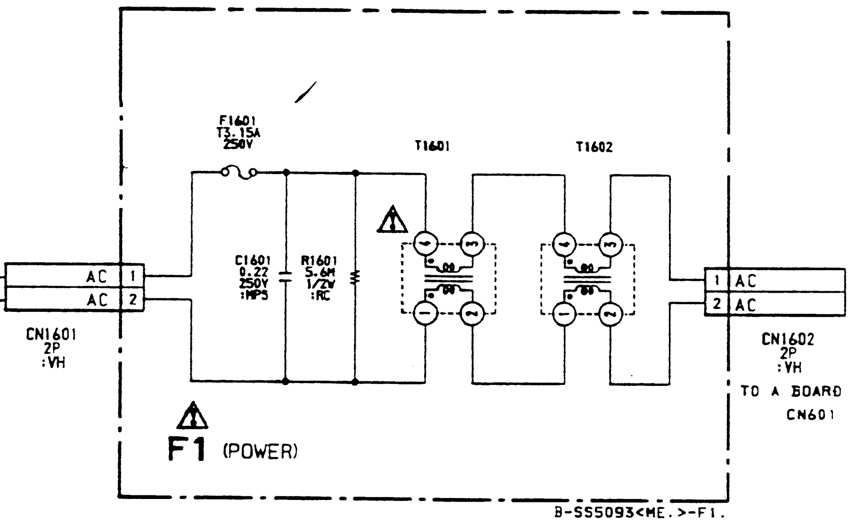

DC VOL ATT
PRE AMP
MUTE
input
mute pulse
feedback
Vcc
output


5V
IC02
SAA5281ZP
TEXT-DECODER
CLK OUT
CLK EN
FFB/VCR/V-P
R/G/B
IC01
P83C654
MICRO-PROCESSOR
Q01
2SC2412K
RESET
Q001
RB3.6MB
Q02
DTC114EK-T146
STAND-BY
Q09
DTA114EK
STAND-BY
Q04
RD5.6MB
5V-REG
Q07
2SD2394-EF
5V-REG
Q08
2SD774
BLK-OUT
FB01
1.1UH
7V
Q05
2SA1037K
BUFFER
Q03
2SC2412K
B-OUT
Q04
2SC2412K
G-OUT
Q06
2SC2412K
R-OUT
D06
DAN202K-T-146
DC-STOP
D03
DAN202K-T-146
D05
DAP202K-T-146
L03
L04
L05
L06
BLK
SDA
SCL
CN01
12P
:BTOB
1 R
2 G
3 B
4 BLK
5 GND
6 TEXT SDA
7 TEXT SCL
8 ST-BY
9 GND
10 SSCP
11 VIDEO
12 7V
TO A BOARD
CN106
V1
(TELE TEXT)
B-SS5093<ME.>-V1.

V1 BOAR

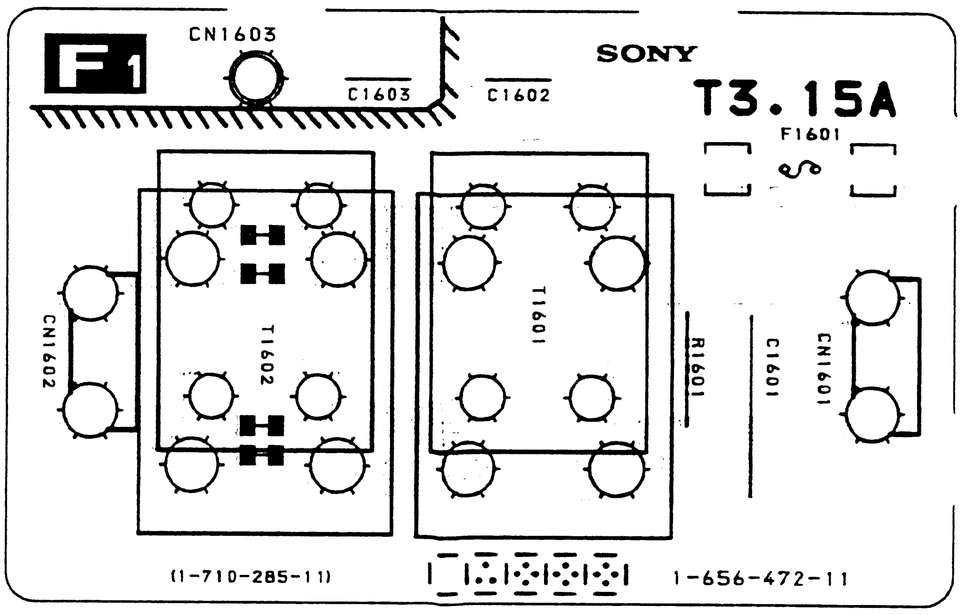

POWER-ON RESET
ODD/EVEN
24 TO 18 HAMMING DECODER
TELETEXT ACQUISITION AND DECODING
SERIAL TO PARALLEL CONVERTER
DATA SLICER AND CLOCK REGENERATOR
ANALOG REFERENCE GENERATOR

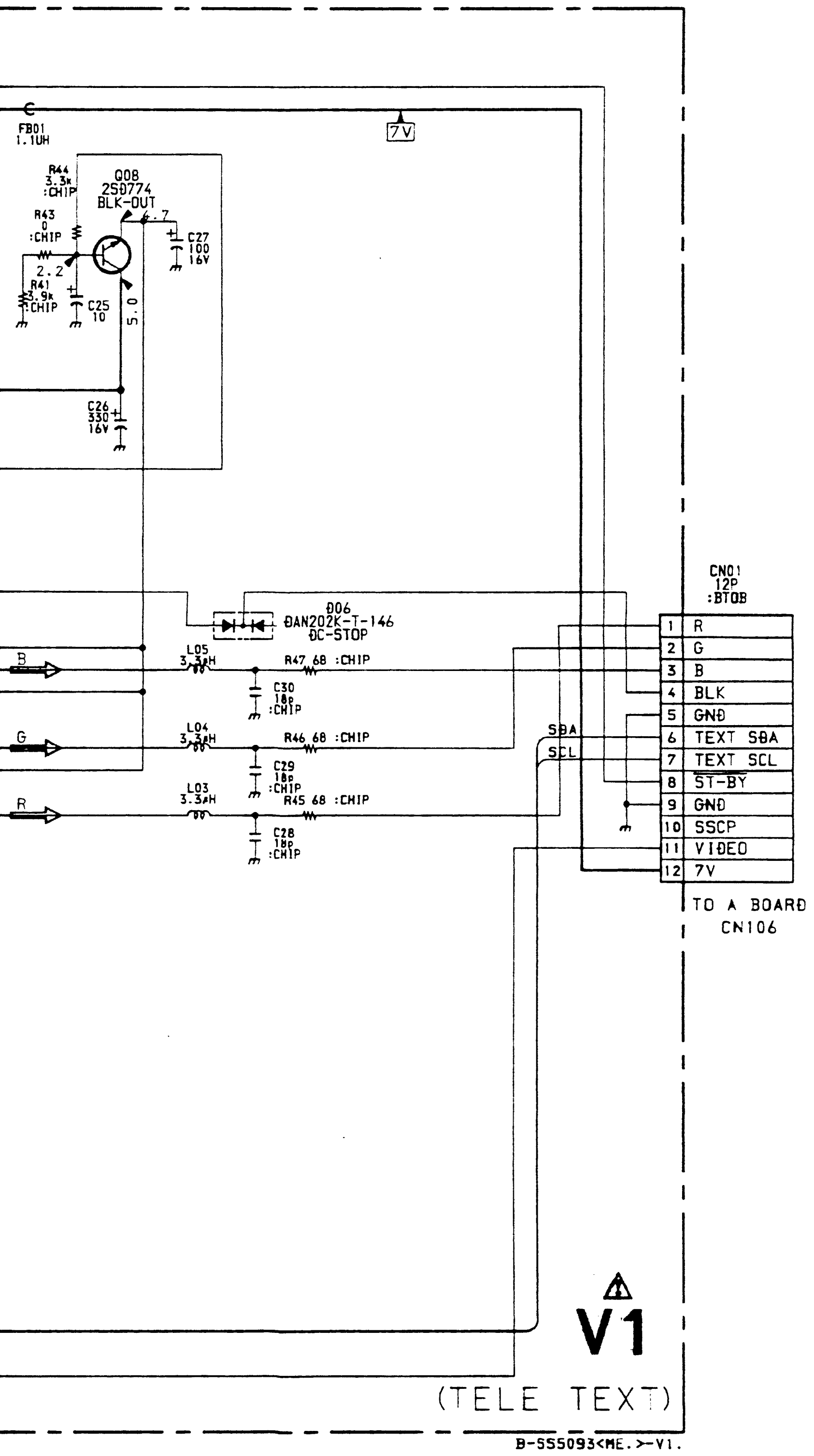
(KV-G25M1 (RUSS) only)


F1601
T3.15A
250V
T1601
T1602
C1601
0.22
250V
:MPS
R1601
5.6M
1/2W
:RC
AC 1
AC 2
CN1601
2P
:VH
1 AC
2 AC
CN1602
2P
:VH
TO A BOARD
CN601
F1 (POWER)
B-SS5093<ME.>-F1.

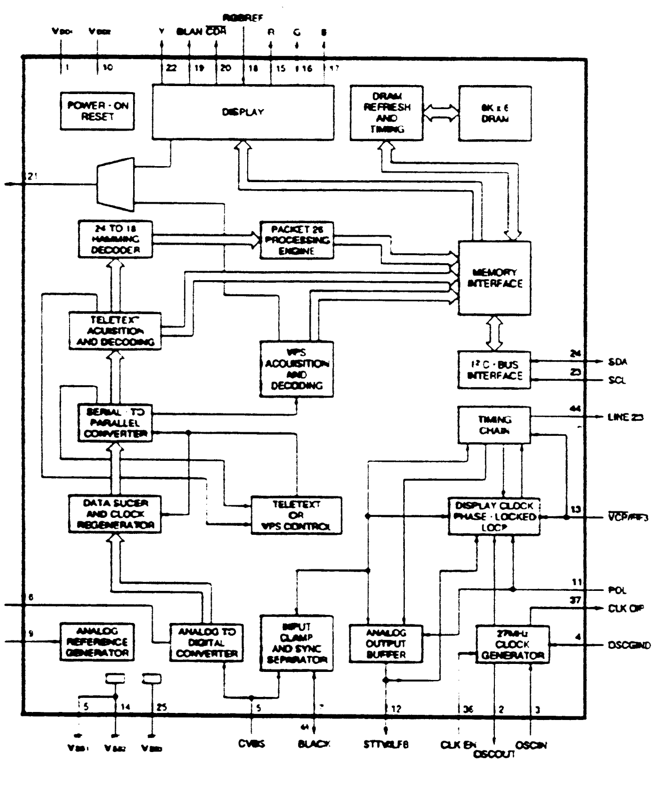
PRINTED WIRING BOARD **F1** [POWER]

– **F1 Board** – (KV-G25M1 (RUSS) only)


F1
CN1603
C1603
C1602
SONY
T3.15A
F1601
CN1602
T1602
T1601
R1601
C1601
CN1601
(1-710-285-11)
1-656-472-11

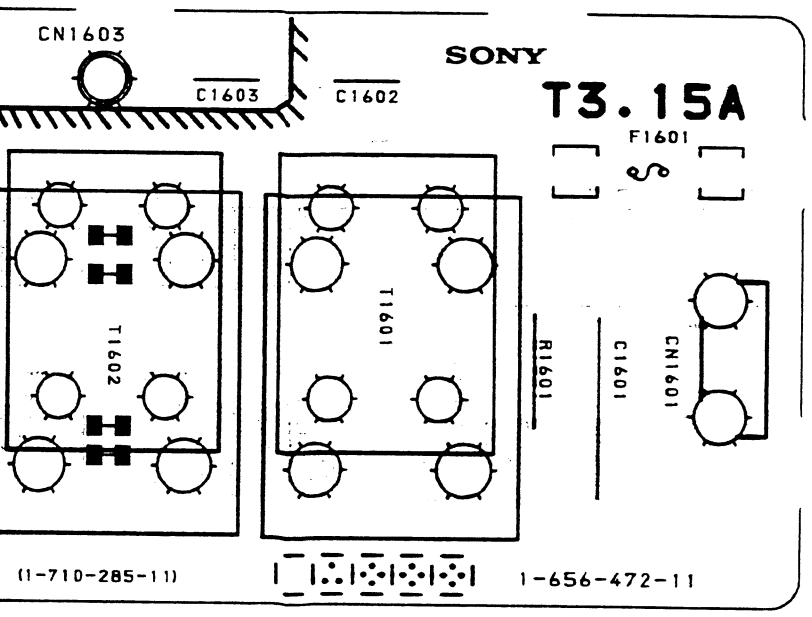

FB01
1.1UH
7V
R44
3.3k
:CHIP
Q08
2SD774
BLK-OUT
R43
0
:CHIP
C27
100
16V
2.2
R41
3.9k
:CHIP
C25
10
5.0
C26
330
16V
D06
DAN202K-T-146
DC-STOP
L05
3.3μH
R47 68 :CHIP
C30
18p
:CHIP
L04
3.3μH
R46 68 :CHIP
C29
18p
:CHIP
L03
3.3μH
R45 68 :CHIP
C28
18p
:CHIP
B
G
R
SDA
SCL
CN01
12P
:BTOB
1 R
2 G
3 B
4 BLK
5 GND
6 TEXT SDA
7 TEXT SCL
8 ST-BY
9 GND
10 SSCP
11 VIDEO
12 7V
TO A BOARD
CN106
V1
(TELE TEXT)
B-SS5093<ME.>-V1.

V1 BOARD IC02 SAA5281ZP


VDD1
VDD2
Y
BLAN
COR
RGBREF
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8K x 8 DRAM
ODD/EVEN (or DV)
24 TO 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
MEMORY INTERFACE
TELETEXT ACQUISITION AND DECODING
VPS ACQUISITION AND DECODING
I²C-BUS INTERFACE
SDA
SCL
TIMING CHAIN
LINE 23
SERIAL TO PARALLEL CONVERTER
DATA SLICER AND CLOCK REGENERATOR
TELETEXT OR VPS CONTROL
DISPLAY CLOCK PHASE-LOCKED LOOP
VCR/FF3
POL
CLK O/P
REF
IREF
ANALOG REFERENCE GENERATOR
ANALOG TO DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
OSCGND
VSS1
VSS2
VSS3
CVBS
BLACK
STTVBLF8
CLK EN
OSCOUT
OSCIN
1 10 22 19 20 18 15 16 17 21 24 23 44 13 11 37 6 9 4 5 14 25 5 12 36 2 3

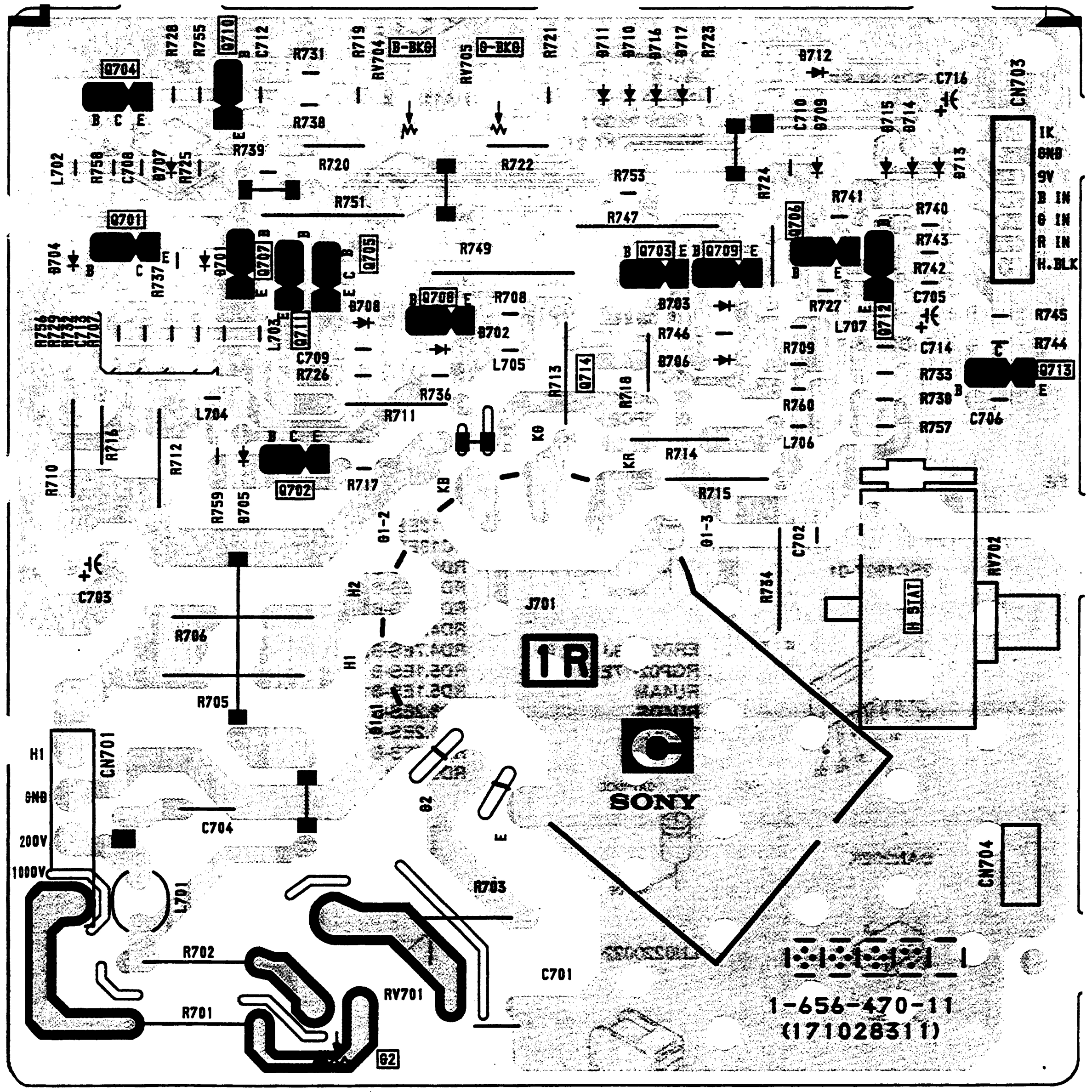
WIRING BOARD **F1** [POWER]

– (KV-G25M1 (RUSS) only)

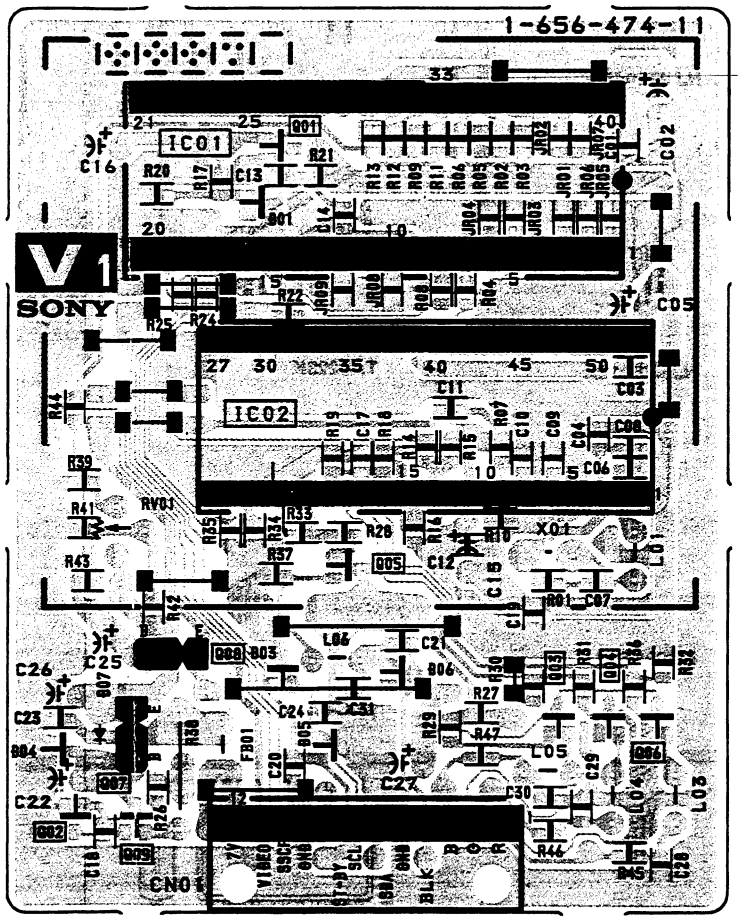

CN1603
SONY
C1603
C1602
T3.15A
F1601
T1602
T1601
R1601
C1601
CN1601
(1-710-285-11)
1-656-472-11

PRINTED WIRING BOARDS **A1** [SIF] **C** [RGB OUT] **V1** [TELE TEXT]

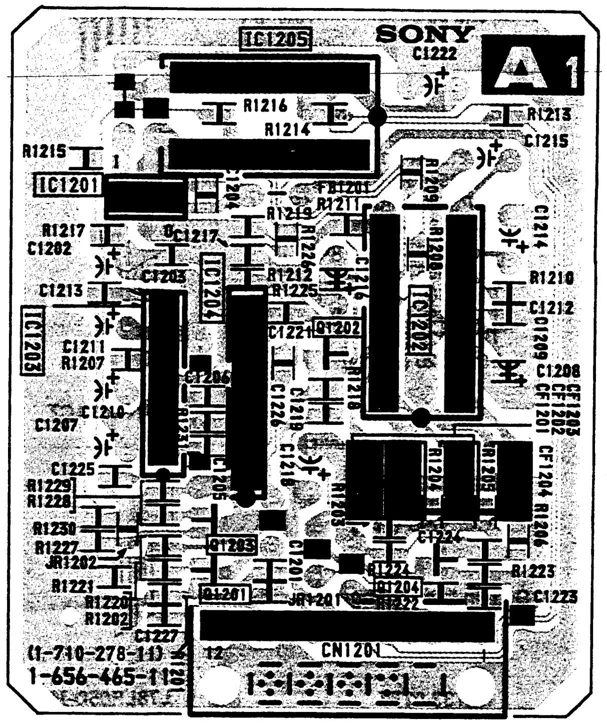
– C Board –


CN703
IK
GND
9V
B IN
G IN
R IN
H.BLK
CN701
H1
GND
200V
1000V
CN704
J701
RV701
RV702
1-656-470-11
(17102831 1)

– V1 Board – **(KV-G25M11 only)**

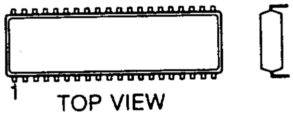

1-656-474-11
V1
SONY
IC01
IC02
CN01
X01

– A1 Board –


SONY
A1
IC1201
IC1202
IC1203
IC1204
IC1205
CN1201
(1-710-278-11)
1-656-465-11

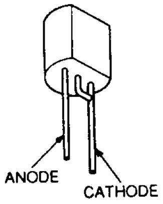
5-4. SEMICONDUCTORS

CAT24C04P (8PIN)
CXA1110BS (30PIN)
CXA1315P (16PIN)
CXP85224A-017S (64PIN)
MC14538BCP(16PIN)
P83C654 (40PIN)
SAA5281ZP (52PIN)
TDA4665T (16PIN)
TDA8366N3D (56PIN)
TDA8395T (20PIN)
TDA8424 (20PIN)
TDA9820 (16PIN)
TDA9821 (16PIN)

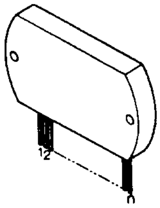


Dual In-line Package
Pin 6 ~ 98

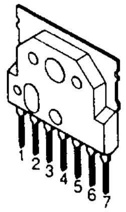
HZT33-02TE
µPC574J


ANODE
CATHODE

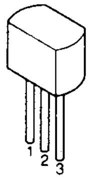
LA7016



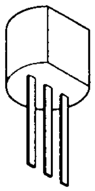
LA7845



LA7910



LM78L05ACZ



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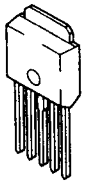
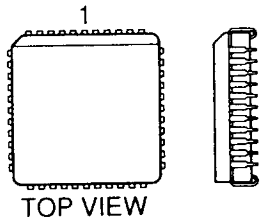
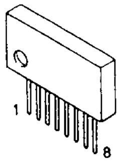


MSP3410 (44PIN)

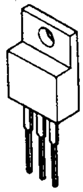


Quad Flat J-leaded Package
Pin 20 ~ 996

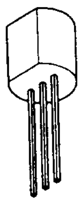
NJM2234L



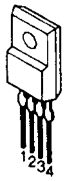
NJM7805FA



NJM78L12A



PQ09RE11



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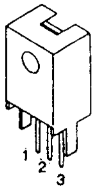
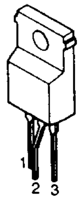
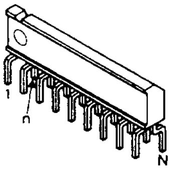


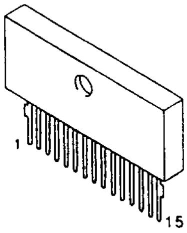
SE-115N



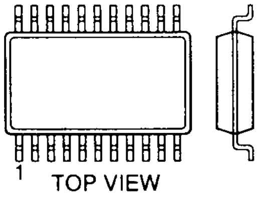
STR-S6707



TA8248K

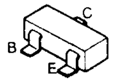


µPC4558G2 (8PIN)

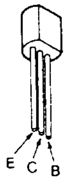


Small Outline L-leaded Package
Pin 8 ~ 98

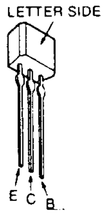
DTA114EK
DTC114EK
DTC143TK
DTC144EK
2SA1037K-QR
2SA1162-G
2SC1623-L5L6
2SC2412K-QR
2SC2712-YG



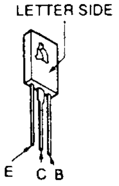
2SA1091
2SA1091-O
2SC1890
2SC2926S-PQ



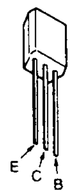
2SC2410SN
2SC3311A-QRS


LETTER SIDE
E
C
B

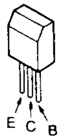
2SC3271


LETTER SIDE
E
C
B

2SC2669-O



2SC3209LK
2SD774-34



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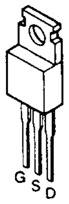

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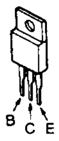

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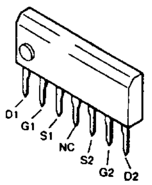
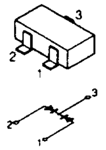
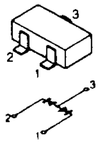

D1
G1
S1
NC
S2
G2
D2

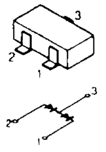
DAN202K



DAP202K



DA204K



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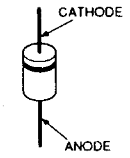
GP08DPKG23
RGP10GPKG23
RPG15GPKG23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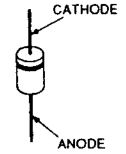
ERC06-15S
30DF6FC8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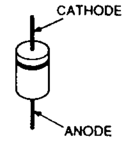
ANODE

RU4AM
31DF2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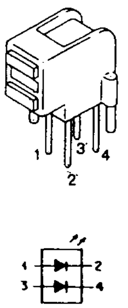

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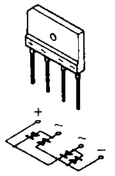
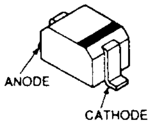
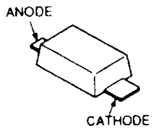
RBV-406H



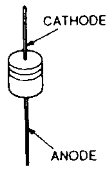
MA113-TX


ANODE
CATHODE

MA77-TX


ANODE
CATHODE

RD10ES-B
RD2.2ES-B
RD3.6ES-B
RD4.7ES-B
RD5.1ES-B
RD8.2ES-B
RD9.1ES-B
1SS133
1SS199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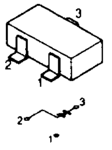
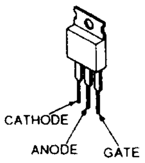
ANODE

RD5.6M-B



5P4M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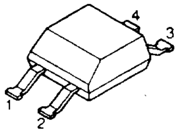
ANODE
GATE

PC123F2



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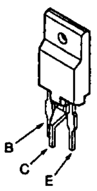
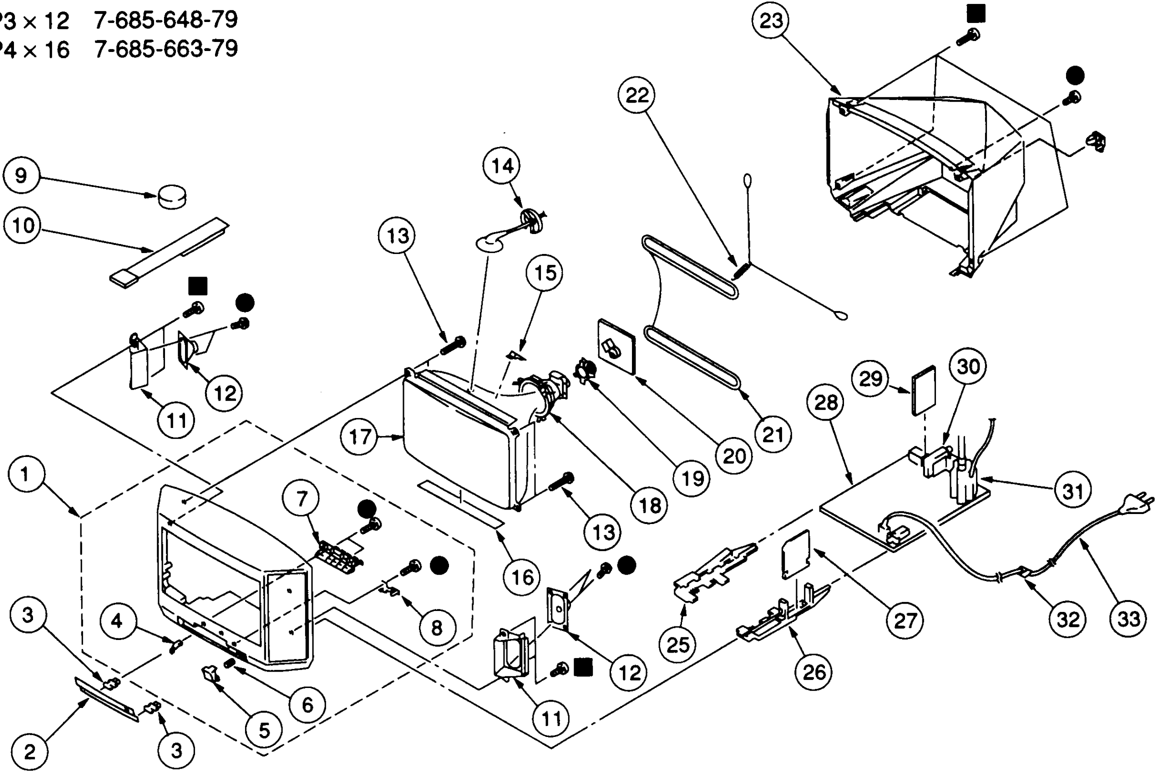


6-1. CHASSIS (KV-V16MF/V16MN1)

●: BVTP3 × 12 7-685-648-79
■: BVTP4 × 16 7-685-663-79


23
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8
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12
25
■
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5
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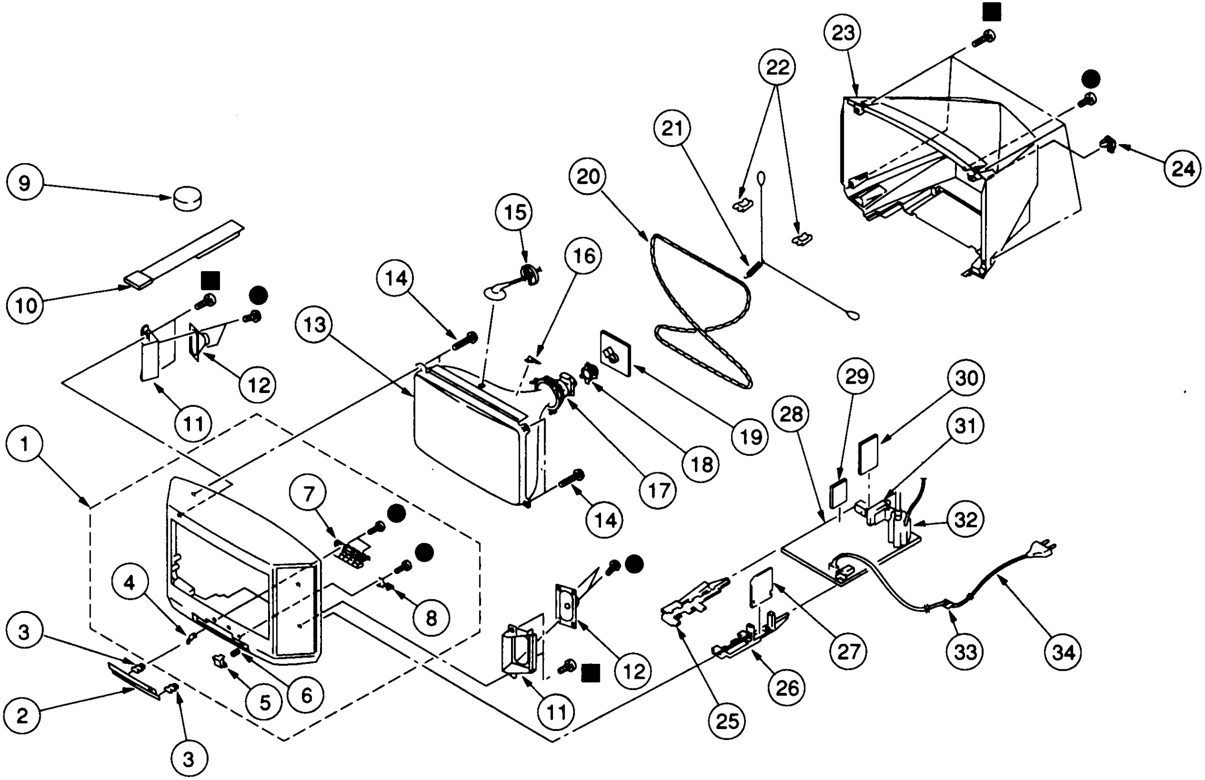
6-2. CHASSIS (KV-20MF1/V20MN1/V20MN11)

●: BVTP3 × 12 7-685-648-79

■: BVTP4 × 16 7-685-663-79



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